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MAC ADDICT

31

MAR/99

Bye-Bye Beige!

EXCLUSIVE
INTERVIEW:
STEVE
JOBS
ON GAMES

CANDY-COLORED
iMACS

PLAYSTATION
GAMES ON YOUR G3

MAC OS X SERVER
SNEAK PREVIEW

STUDIO DISPLAYS
GET NEW SKINS



We Dive Deep
into Apple's
Blazing New G3

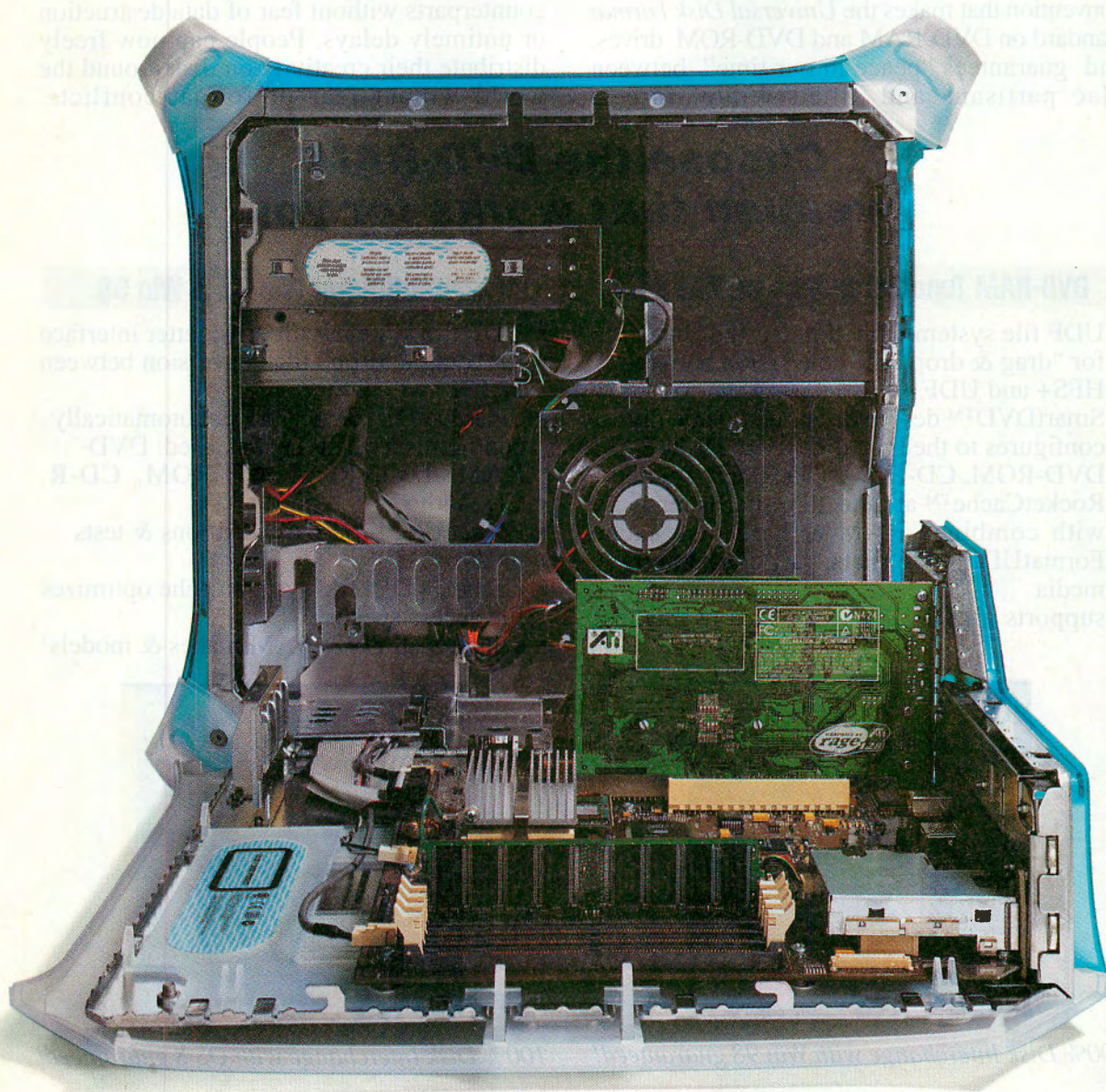



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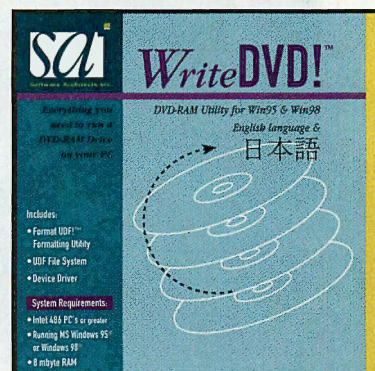
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WHAT'S TALL, CURVY, and blue-and-white all over?



ANIMAL BANG DRUMS! ANIMAL! ANIMAL!! Bang drums!!!! BANG DRUMS!!!!



MY BRAIN! Steve Jobs stole my brain!



COME, MAC-SAN, and learn the ancient ways of the photograph manipulator.



The new G3 tower was photographed by Aaron Lauer.

MARCH 1999

highlights

18 The Mac of the Future

You can kiss your boring beige boxes good-bye. Apple's dream machines are becoming realities, and they're all see-through, sci-fi color. But that's not all that's news. From matching monitors to hopped-up hardware made for gamers, it looks like a whole new world out there.

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28 Non-Musician's Guide to Making Music

If you've always wondered what it would be like to be Prince for a day, we have the music how-to for you (the buttless chaps are sold separately). We show you how to compose your own musical masterpiece without using any actual instruments.

BY KRIS FONG

36 Macintosh Urban Legends

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BY MARK SIMMONS

how to

68 Stitch a QuickTime VR Panorama

Virtual, huh? Never mind the lingo, we have your guide to building QuickTime VR panoramas lickety-split. Take a bunch of photos, scan 'em in, load up the PhotoVista demo from The Disc, and it's on, baby!

BY DAVID REYNOLDS

72 Plug Into Photoshop Plug-Ins

Adobe Photoshop's plug-in architecture spawned a dynasty. Take a look at our roundup of the coolest add-ons for this world-renowned app. We'll have you meshing colors, framing faces, and scorching earth in no time.

BY STEVEN ANZOVIN

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Volume 4, Issue 3

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8 Editor's Note

Apple's Macworld Expo announcements and you—it's not just about candy-colored plastic.

10 Letters

The Pez drive, the chiaMac, and using packing peanuts as an IQ test—how can you resist?

14 Get Info

We make sense of all the Macworld Expo announcements—at least the ones we understand. Plus, we look at what you lose when you zap PRAM, help you choose a video card, and announce the winners of the Lara Croft look-alike contest.

18 Scrapbook

In our inaugural installment of the new *Scrapbook* section, we pore over Sherlock's internals—just for you (and Watson, who did the *real* work).

40 Reviews

Psst. Yeah, you. Come read the top-secret reviews that developers may or may not want you to see. We dish out the dirt on Corel Photo-Paint 8, MovieWorks 4.1, QuarkImmedia 1.5, Autoscore 2.0.2 Professional, Dark Vengeance, and Future Cop: LAPD.

66 Power Play

Check out the news on Voodoo2 for the iMac, the wicked Voodoo3, to-die-for Starcraft action figures, and the power gamer's most-wanted list for early 1999. Oh yeah, and learn about the anime hard-suit hotties—ouch!

78 Ask Us

Just how Y2K-compliant is the Mac? How can you tell the difference between iMac model variations? What are disclosure triangles? How do I move nonmovable dialog boxes? We answer all of these burning questions and more!

104 Shut Down

Have you talked to someone about a will? Because you might just die laughing when you read this, and you wouldn't want to have your assets tied up in probate if you did.

Mac
ADDICT 31
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a blood-spurting
mutant beast with it!

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Sacto. Cretan or cretin? Welcome aboard, Ana.



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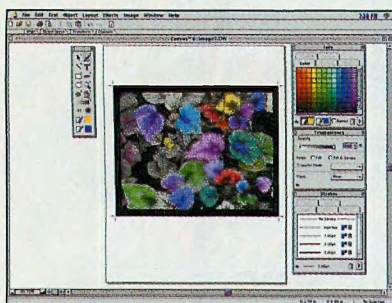
DECK II'S GOT much better overdub sync functions than whatever those classic Godzilla films used!



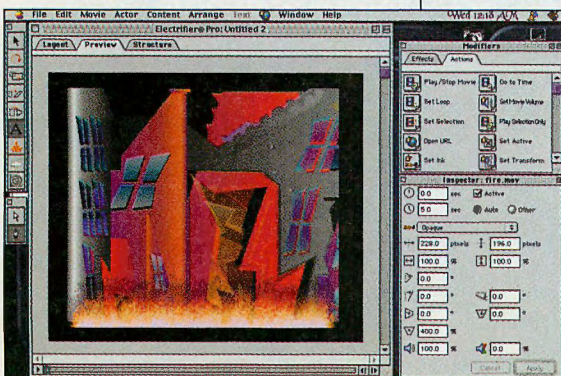
I DUNNO, GUYS—I think this hazing thing is getting a little out of hand.



NO ANIMALS WERE HARMED in the making of this game.



COLOR CHOICES? It's a little hard to paint without the numbers.



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the disc



MORE THAN A COASTER!

highlights

Deck II 2.62 Demo

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Myth II: Soulblighter Demo

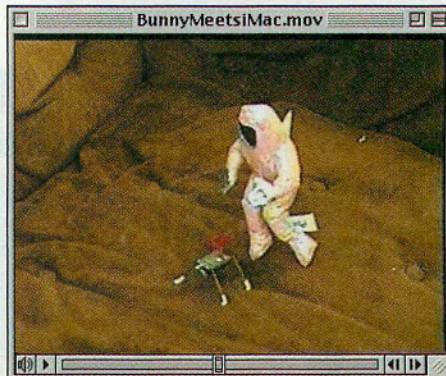
It ain't no print error this time, kids! The long-awaited follow-up to Myth: The Fallen Lords is here, and we bestow unto thee thy cherished demo. OK...calm down, relax, breathe. Soulblighter is here with a vengeance, and in this dark 3D fantasy the Light and the Dark come face to face once again 60 years after the Great War. This squad-based, real-time strategy game is chock full of the things you hard-core gamers crave. So if total blood, guts, gore, and carnage don't exactly float your boat, you might want to check out Freddi Fish 3.

Canvas 6 Trial

Picasso might've wished he'd had it this good! This complete graphics and publishing solution allows you to integrate text, vector drawings, bitmaps, and even Web publishing into one program. Create cool graphics and illustrations easily with professional results for print, multimedia, or the Web. Canvas 6 also gives you multiple undos for all those haphazard blunders. Can't do that with a brush, paint, and canvas!

Electrifier Pro Demo

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David makes his directorial debut in this stop-motion movie. Will the bunny take over MacAddict's corral? Place your bets...



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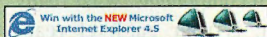


Power On Software—Action Files
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<http://www.poweronsw.com>

Action Files, the *Macworld* 1998 Eddy Award Best Utility finalist and *MacHome* 1998 Utility of the Year, completely replaces the old, tired Macintosh standard Open and Save dialog box with a new, resizable window that contains an array of time-saving features. All the power and control you need is in a custom menu bar, inserted into every application's Open and Save windows. A must-

have productivity powerhouse!

Action GoMac, the second release of the Action Utilities collection, offers the ultimate in ease of use and aesthetic design for Macintosh users who want instant access to all their programs while maintaining precious screen real estate. Action GoMac is the only utility on the market that lets you anchor a task bar across the very bottom of the screen, thereby making its presence transparent. An addictive utility for the Mac enthusiast!



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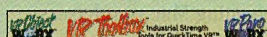
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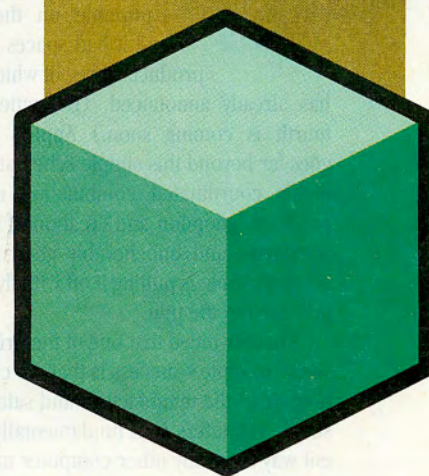
VR Toolbox's focus is the development and marketing of software tools for QuickTime VR. Its aim is to produce the most powerful, highly advanced, intuitive QTVR programs ever created. Take a peek at two of its products, VR PanoWorx and VR ObjectWorx.

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editor's note

When it comes to marketing, it's the brain stem that matters.

As I write this, we're struggling to pull our eyes away from the newly unveiled candy-colored iMacs long enough to make sense of Apple's bombshell announcements at Macworld Expo in San Francisco. One thing is clear: Apple's new way of doing

business isn't just about plugging hardware into the four-square diagram Jobs showed off during the Worldwide Developer Conference last May. That diagram graphed consumer and professional markets on one axis, desktop and portable on the other, and it had spaces for four

products, three of which Apple has already announced. (Be patient—the fourth is coming soon.) Apple's strategy goes far beyond this simple schematic: It's a highly coordinated combination of great products, adoption and creation of industry standards, and unbelievably good marketing. And Apple is pulling it off with flying colors, pardon the pun.

I'm convinced that one of the prime reasons for Apple's success is that the company now views the manufacture and sale of personal computers in a fundamentally different way from any other computer manufacturer. And the big difference is this: Apple is aiming for the brain stem, where basic body responses make their home.

That's not to say Apple is *only* into looks—the company values brains as well as beauty. For its approach to work, Apple has to stock each Mac model with the latest technology and integrate it so well that folks don't have to spend a lot of time thinking about what's in the box. And it has done this by including lightning-fast technology and cross-platform, cost-effective,

industry-standard components. What really matters, though, is your gut-level reaction—Apple wants folks to respond to its products from the same place in their bodies that triggers hunger, deep in the primal zone of the brain that really demands attention. In this strategy, rather than studying a computer's technical specs, deciphering the technobabble, and concluding "Yes, that would be a good buy," people will just look at Apple's new hardware and automatically say, "I want one." The first way—the Wintel way—requires too much effort from the consumer. The second way—Apple's new way—requires only that folks see the hardware. It's as simple as that. Once they see it, they want to touch it, to hold it, and most important, to own it.

And that's how Apple will succeed in a hardware market that's already packed to the gills. The company is changing the rules. Instead of trying to compete with yet another beige box, it's coming out with strikingly different, colorful enclosures that hold all kinds of high-end features—as good as anything on the market—for an attractive price. Folks don't have to worry about the technical specs, because Apple's done a great job of taking care of those (and at a great price to boot). Instead, they can just bask in the presence of great hardware and great design.

Marketing at the visceral level is just the all-important first step. Once you bring people in, you have to keep them there for a while—it's similar to a Web advertising strategy in that sense. Apple gets this aspect of business, too, and it's providing substance underneath all the fancy wrappings. The company's push to make the Mac great for gamers is just one example of the depth that Apple is creating to attract both new and returning Mac purchasers.

It's long been one of the major complaints about the Macintosh that "there aren't any games for it," and Apple has worked long and hard on multiple fronts to make sure of several things: The right games are on the Macintosh, the right support for game developers keeps new

games coming to the Macintosh, and the right hardware is in place for those games. We've seen all three at the recent Macworld Expo. Apple announced a slew of new games that developers are porting to the Mac (and Connectix stunned the world by showing up with a Sony PlayStation emulator), the company licensed OpenGL to make sure new games make it to the Mac, and it included a killer graphics chip in the new professional Macs (which incidentally also make great gaming machines).

Apple's doing it right these days—not just games and hardware, but almost everything it's attempting. It's generating a lot of flash, yes, but there's plenty of real heat behind that flash.—David Reynolds

Shiny Things

This month, we're debuting a new section in *MacAddict* called *Scrapbook*. Each month, our stellar Technology Editor Mark Simmons will pick a piece of Mac software or hardware and carefully dissect it, prying out its secrets for your benefit. This month, he takes on Sherlock, showing you how to perform killer searches with Mac OS 8.5's premier feature. We thought about calling the new section *Shiny Things*, but we became too fascinated with the name to do any work. Mmmm, shiny. Mark has been working with Senior Editor Rob Capps to pull this off, and the result looks great, thanks to their efforts—we hope you like it.

To make room for *Scrapbook*, we're saying goodbye to *Cravings*. After two and a half years of writing about hundreds of cool Mac products, we figured it was time for a change. Not that our cravings are satisfied, you understand.

One other note regarding Mark's efforts: In the January 1999 issue, an editing mishap transmogrified the meaning of a sentence in the "Port Authority" story on page 18. In describing the Accelerated Graphics Port, we wrote, "AGP allows a graphics card to store 3D resources." In full, this should have read, "AGP allows a graphics card to store 3D resources such as texture data in the computer's main memory rather than relying on its own dedicated video RAM." Mark regrets the error, and has been up nights thinking about it.

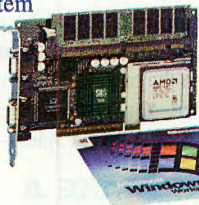
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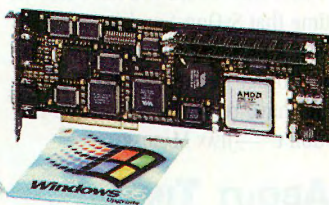
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Mac Resource Page provides news and reviews, special deals, bug reports, and more.



<http://deal-mac.com>

Deal-mac finds hot offers on cool products, helping Mac shoppers save time and money.



<http://ogrady.com>

O'Grady's PowerPage is the ultimate resource for PowerBook users, with notebook news and mobility message boards.



<http://www.imgmagazine.com>

Inside Mac Games is a monthly CD-ROM magazine devoted to Mac games, with its own news-packed Web site.



<http://www.infoxczar.com/atat>

As the Apple Turns tunes in daily for the latest twists and turns of the Apple soap opera.



<http://www.everymac.com>

EveryMac's exhaustive catalog of Macs and Mac compatibles provides complete specs and technical data.



<http://www.iconfactory.com>

Iconfactory turns your drab desktop into a pixelated paradise with its fabulous selection of handcrafted icons.



<http://www.saracen.com/applejedi.html>

AppleJedi is the tub-thumping e-zine for evangelists, developers, solutions providers, and Defenders of the OS.



<http://www.macobserver.com>

Mac Observer offers comprehensive daily Mac news, analysis, information, and resources.



<http://www.maclede.com>

Macintosh Gamer's Ledge brings you the latest Mac gaming news and reviews.



letters

Packing peanuts and ch-ch-chiaMacs make for one heck of an Internet party.

This Month

WRITE TO US: MacAddict, 150 North Hill Drive, Suite 40, Brisbane, CA 94005, or email to letters@macaddict.com.
FOR CD PROBLEMS: Go to <http://support.imaginemediacom.com>.
FOR SUBSCRIPTION QUERIES: Call (toll-free) 888-771-6222.



GET ON, GET ACTIVE. Talk to us and to other Mac addicts at the Web site.

We Are, Too

Does David Reynolds really have that big a drinking problem? In the December staff video, he had bottles all over the place and was rambling on like some sort of wino. And then there was Wade in *It's a Wonderful Mac*. I thought Wade might have been knocked unconscious; he took some blows to the head there. And how about those new hires in that other video? They had the fear of death on their faces. I think David really needs to seek help for his problem before it gets out of hand. Somebody could get an eye poked out or something. I am just concerned for his and everyone else's safety.—MATTHEW HOLT

But Obviously Underpaid

You *paid* someone to eat a biodegradable packing peanut? I got two people to eat them for free. However, both were PC users. I guess it only goes to show that Mac users are more intelligent!—JACQUI TULLEY

Chia Prison Guy Loves It

This is what news artists do on a slow news day. It's a little something I put together that I thought you might all enjoy. It is undoubtedly *the* perfect gift for the Mac addict who has everything.—LOU SPIRITO



Say hello to chiaMac.



We Foresaw Your Conversion, Too

I'm now on my third issue of *MacAddict* after buying an iMac and converting from Windows. I love my new iMac, and I have to say I'm impressed with your magazine. But what really amazed me was the ability of your staff to foresee the downfall of SyQuest, as illustrated on page 20 (*Get Info*, Dec/98). How could you have known at press time that SyQuest and its new USB SparQ drive would be missing from the removable storage scene? Maybe the cartoon should have read, "Now you see me, now you don't."—JUAN MAGDARAOG

It's About Time

I feel so ashamed of trying to copy and cheat Apple! I think Apple is *far* superior to Microsoft, so please accept my unconditional surrender!—BILL GATES

What Do You Think They Call You?

One has to wonder about the quality of a product when the literal meaning of its name is *small and soft*. I can think of several things that are small and soft, none of them good: slugs and soggy cereal, just to name a couple. So from now on I am going to refer to this software giant as "Nanno-flaccid."—AARON SHOWALTER

The P-Files

There I was, enjoying the monthly staff video, when about halfway through I saw something horrifying! Those fools were going to burn a PC. Didn't they know there were special spores in the Pentium family of chips that only extreme heat activated? Yes, I too was skeptical when I first heard rumors about Intel's engineers going out to recent forest fires and examining the burned pine trees. But then I heard about how hot those Pentium II chips were running.

The ugly truth was almost too much for me. I must have blacked out. When I regained consciousness I remembered the revelation with startling clarity. They make them hot on purpose. Then the special spores are released. Carried out of millions of offices by the air-conditioning systems (through inefficient air filters), not all of them find a home. But they are like brine shrimp eggs, and lie dormant until an unsuspecting minitower wanders by. Then *whammo!* It's a PC. So in the future, please be careful how you dispose of those old PCs. Even the original chips had prototypes of the spore. You could cause the deaths of millions of innocent Macs.—ROB KALLMEYER

To Make a Long Story Long...

I could pull up to my computer and spend a week's vacation, no problem. My wife, on the other hand, has not come to appreciate its potential. The other night, I was heavily into computing (making icons, renaming folders, sorting files, and so on), when my wife called out from our daughter's bedroom, "Do you think you could find a picture of an eagle on that thing?" My jaw tightened and my knuckles turned white. How could she call my 9600 300MHz Mac with 128MB of RAM, a 13GB hard drive, and so forth, *that thing*? "Your daughter needs it for a school paper," she continued,

not knowing the stir her words had caused. I started to yell back something of a nature that would probably have put me in the doghouse for, say, two years, when I realized this was my chance to show her just how resourceful "this thing" was. A picture of an eagle? No problem. My pulse (85) started to rise as I contemplated just how I would not only get her a picture, but get her one that would produce a "that thing can do that?" response.

My pulse (now 90) climbed as I thought about my many options: I have 20MB of ClarisWorks graphics on the hard drive, three CDs of various artwork, 13 CDs of Art Explosion graphics (pulse now 95), all the PrintShop graphics, not to mention years of artwork from Softdisk for Mac on floppy discs. I also have three different encyclopedias on CD (pulse 100). I even have videos of eagles flying! But this was only the tip of the iceberg. Just to be thorough, I went online and typed in *eagle* (159,297 responses), *American eagle* (6,080 responses), and *bald eagle* (8,310 responses, my pulse now faster than I could count). Just as I was about to organize all my options and announce with great pride the results of my search, she announced from down the hall that they no

longer needed my help—they had cut out a picture from a magazine. The tone of her voice indicated total ignorance of my feverish activity. She wasn't sure if I'd heard her first request, and if I had (yawn), no need to bother now. I started to formulate a response that would have been good for, say, two more years in the doghouse. But fortified by 20 years of marital training, I closed my eyes, sighed deeply, and went back to my icons.—RODNEY J. AVILLA

DON'T YOU WORRY IT'LL DROWN?

Here is a photo you might have some fun with. I am in the process of creating a fish tank out of an old SE that blew its chip set. One evening I caught my cat having a look around inside.—STEPHEN C. HUGHES-JELEN



IT'S HIS SECRET IDENTITY

I just noticed that Lara Croft (Tomb Raider II ad, Dec/98, p85) bears an eerie resemblance to Michael Jackson. Perhaps she's one of his many disguises?—RENELE DESJARDIN

YOU KNOW YOU'RE A MAC ADDICT WHEN...

...your modem lights burn out when you're trying to download Raf Anzovin's cool films.—GEOFFREY D'CRUZ

...you write down "Bondi" for your eye color on personal information forms.—TRAVIS SISTI

...you only watch TV shows that feature Apple products.

...you drive by a farm with a handwritten sign nailed to a tree stating "Apples for Sale," and you are impressed with Steve Jobs's new distribution outlets: Apples are available everywhere.

...you go to a strip club and spend the whole night talking to the dancers about your new G3.—BRIAN MELOCHE

...the techie at MacConnection is the same one who helped you when he worked at Power Computing (true story).—REESE SCHREIBER

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FreeHand 8.0	6
Illustrator 8.0	6
Illustrator 7.0	6
Mac OS 8.5	4
Mac OS 8	4
Multi-Ad Creator2 1.1	4
PageMaker 6.5	6
Painter 5.0	4
Photoshop 5.0	10
PowerPoint 98	3
QuarkXPress 4.0	4
Scanning	1*
Troubleshooting 8/8.5	4
VectorWorks	5
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Design & Layout	1*
Digital Cameras	1*
Director 6.0	5
Excel 5.0	5
FreeHand 7.0	6
HyperStudio 3.1	2*
Mac OS 7.5	4
Multimedia	1*
PageMill 2.0	2
Photoshop 4.0	10
PowerPoint 4.0	3
Premiere 4.2	3*
QuarkXPress 3.3	4*
QuickBooks 4.0	3*
Quicken 98	1
Troubleshooting 7.5	3*
Word 6.0	6

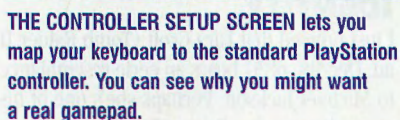
Please specify Macintosh platform when ordering.
*Indicates this title is available on video only.



Quick Start
Speed Learning System

Connectix lets G3s run PlayStation games!

Of course, Virtual Game Station has a couple of restrictions. It only works on Apple-issued iMacs, Power Mac G3s, and PowerBook G3s—no PowerForce, Crescendo, or Maxpower upgrade cards allowed. And Connectix can't guarantee that every one of the 600-plus PlayStation titles will work properly, especially as new games continue to push the technological envelope. Connectix keeps a running tally of tested and approved games at <http://www.virtualgamestation.com> (see the sidebar "Games People PlayStation" for a partial list). Lastly, the features of Sony's much-vaunted dual-shock controller are also still beyond reach.—RC



WE TOOK ACCOLADE'S TEST DRIVE 5 out for a spin. The game runs fine, but it's tough to drive and take screen shots simultaneously.

Dragons and lizards and street fighters, oh my!

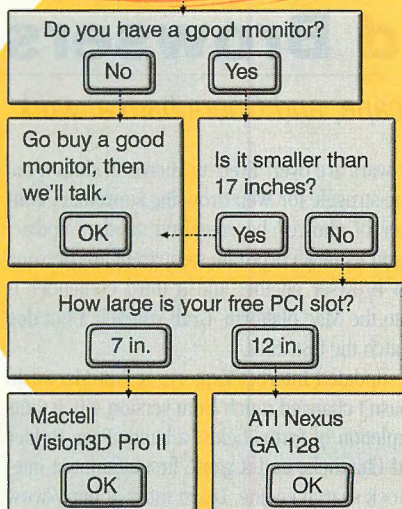
While Connectix's Virtual Game Station does a fine job of running many PlayStation titles, verifying that the emulator performs up to the company's standards requires exhaustive game-by-game evaluation. You'll find an up-to-date listing of games for which Connectix guarantees acceptable performance—meaning no more than a couple of skipped frames every few seconds—at the company's <http://www.virtualgamestation.com> Web site. Here are a few big-name titles from the list of 100 games that had already passed muster at press time. You can also run *Diablo* and *Tomb Raider II*, but we think you'd be much happier with the full-featured Mac versions.—MS

- Battle Arena Toshinden 1, 2, and 3
- Bushido Blade
- CastleVania
- Cool Boarders 3
- Crash Bandicoot 1, 2, and 3
- Einhander
- Final Fantasy VII
- Gex
- Gran Turismo
- Jet Moto 2
- Madden NFL 97
- Metal Gear Solid
- NBA Shootout 98
- NFL Gameday 98
- OddWorld: Abe's Exodus
- Parasite Eve
- Spyro the Dragon
- Tekken
- Twisted Metal III
- Wild 9
- Wipeout XL
- X-Men versus Street Fighter

Note: The reference system is the original 233MHz iMac; faster G3 systems may succeed where the iMac stumbles. Connectix hasn't tested all of the hundreds of available PlayStation titles. Future upgrades to the Virtual Game Station software will improve the scope of its game support.

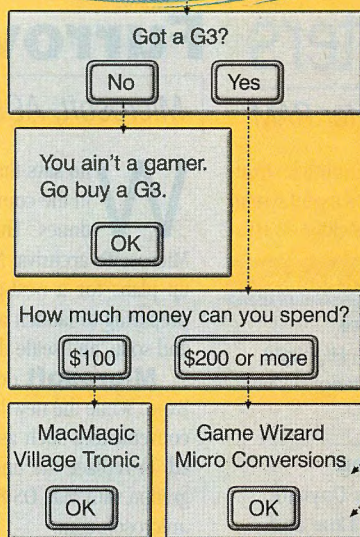
How to Pick a Video Card

A. I'm a graphics god, and I need more pixels.

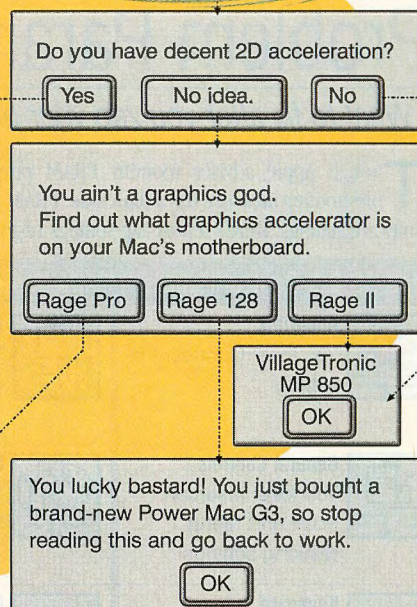


Special for video capture clowns:
A dedicated video capture card such as the Aurora Fuse will best meet your needs

B. I'm a gamer, and I need more polygons.



C. I'm a graphics and gaming god, so get out of my way!



get info

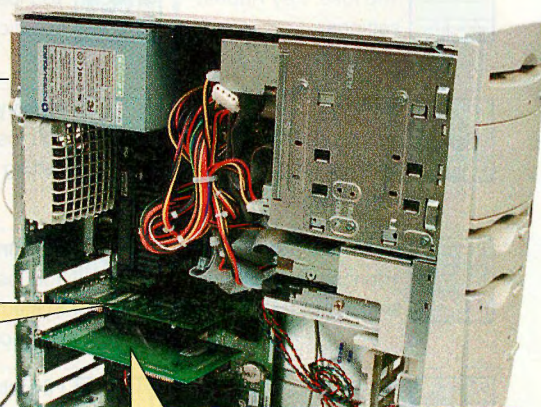
Gadget Envy

PC toys we'd like to swipe

Mac owners have a multitude of blessings, among them the elegant sophistication of the Mac OS, sleek industrial design, plug-and-play compatibility, and the ongoing drama of Apple Computer to divert us from our humdrum lives. But while we wallow in blissful contentment, our Wintel brethren are stocking up on all manner of accessories, widgets, and gadgets, as if to compensate for their day-to-day drudgery. Since we're the kind of people who want *all* the toys, we've scoped out this alternate universe and drawn up a little list of spiffy PC goodies we'd like to see on the Mac platform.—MS

Riva TNT graphics card

We have 3Dfx's Voodoo, and we have ATI's Rage 128, so how about the other big player in PC graphics acceleration? NVidia's top-of-the-line Riva TNT is a superfast 128-bit chip that boosts both 2D and 3D graphics. We gather it's about on a par with ATI's new Rage 128, but choice is always good. Scope it out at <http://www.nvidia.com>.



3D sound card

Creative Labs' Sound Blaster Live and positional audio cards based on Aureal's A3D technology not only turn your puny stereo speakers into an almost surround-sound system, but also provide effects such as echoes and reverb. Until Mac gamers get this stuff, our dungeons will never be as cavernous and creepy as theirs. Covet these at <http://www.sblive.com> and <http://www.a3d.com>.



Mission Accomplished: Palm Connectivity

Now here's a PC-envy success story. 3Com's Palm MacPac version 2, in beta as we write this, finally gives Mac-loving users of the Palm Computing handheld family a set of connectivity options equal to or better than those of Windows users. Highlights include the Claris Organizer-based Palm Desktop 2.1 and support for "conduits" that let third-party applications sync with the Palm's databases. Look it up at <http://www.palm.com/macintosh>.



Rio PMP300

Now that Diamond Multimedia's portable MP3 player has made it through the legal obstacle course and onto the streets, how about a hookup for Mac music mavens? We can download MP3 files, make our own, and play them on our Macs, but right now only PC users can load tracks onto Diamond's Walkman-like playback device. Take your envy to <http://www.diamondmm.com>.

Problem Parameters

What to fix after you zap your parameter RAM

Though Apple advises monthly PRAM purges, this miracle troubleshooting measure has a dark side: PRAM also stores useful system software settings. Here's a post-zap settings restoration checklist.—MS

Mac OS 8.5 Control Panels



AppleTalk
You lose: Connect Via setting



General Controls
You lose: Insertion Point and Menu Blinking settings



Keyboard
You lose: Key Repeat settings



Memory
You lose: RAM Disk settings (and contents)



Monitors & Sound
You lose: Alert Sound selection



Mouse
You lose: Mouse Tracking and Double-Click Speed settings



Startup Disk
You lose: Disk selection

Additional OS 8.1 Panels



Appearance
You lose: Highlight Color setting



Date & Time
You lose: Daylight Savings Time and Time Zone settings



Map
You lose: City Location setting



Memory
You lose: Cache Size setting



Monitors & Sound
You lose: Computer System Volume and Balance settings



PC Exchange
You lose: On or Off setting

OS-less

The change is subtle, but Apple finally got around to adjusting its Mac logo. What's the big difference? It dropped the OS. We suppose this makes sense, as the Mac is hardly just an OS. It's a platform, a motherboard, a lifestyle. A few vendors have already caught on, so you'll see the new design popping up everywhere.—RC



OS? OS? BUT I BOUGHT A Mac minitower!



AHHHHH, NOW that's the symbol of an integrated solution.

Furrowed Browsers

Microsoft, AOL-Netscape, and Opera hard at work

Who says the browser wars are over? Even as Microsoft slugs it out in the courtroom, the struggle for Web browsing supremacy continues. The "browser of choice" has received another update; Microsoft's archival Netscape and its new corporate stepparent are drawing up plans for a next-generation browser engine; and a third contender is preparing to launch a foray onto the Mac platform. Grab yourself a hot dog and soda, and settle down to watch the festivities.

Microsoft debuted the updated Internet Explorer 4.5 at Macworld Expo. While the new browser hasn't changed much from version 4.0, it touts conveniences such as autocompletion of forms fields, a handy Page Holder tab to replace the underutilized Channels, and a game first attempt at integration with Mac OS 8.5's Sherlock search engine. Learn more at <http://www.microsoft.com>.

Netscape Communications, now a subsidiary of the multibranded monolith America Online, is plugging away on its own next-generation browser. Netscape's open-source development effort, based on the Mozilla Web site, has yielded the Gecko browsing engine, which is smaller, faster, on the cutting edge of Web standards, and scheduled to show up in the first half of 1999. In the meantime, Netscape's new owner will keep bundling Internet Explorer with its flagship online service, while hyping Netscape Communicator to the 20 million-plus users of its ICQ chat system. Um, whatever you say. Check in on the browser guys at <http://home.netscape.com>.

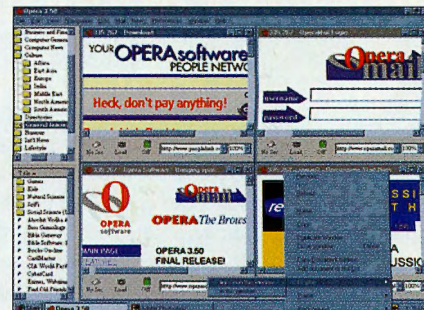
Opera Software is the dark horse in the browser meet; its \$35 Opera browser is renowned for its speed, thrifty use of resources, standards adherence, and customizability. On the other hand, it presently works only on Windows. To broaden Opera's audience, the company has commissioned third-party developers to port the browser to other platforms. The replacement of the development team delayed the progress of the Mac version, so it'll likely be a few months before we get our shot at this appealing third browser option. Visit these brave Norwegians at <http://www.operasoft.com>.—MS



INTERNET EXPLORER'S NEW PAGE HOLDER TAB stores your fave links pages, with an optional links-only view for no-frills surfing.

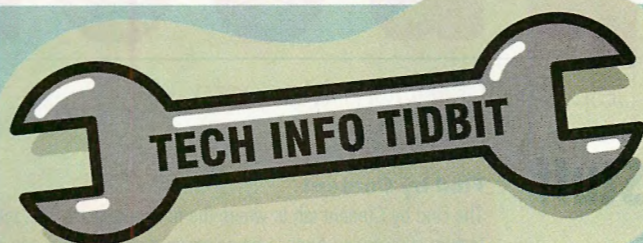


NEXT TO IE 4.5'S SHERLOCK POP-UP is an address-entering Go button, for those who don't know the Return key accomplishes the same thing.



IF AND WHEN OPERA COMES TO THE MAC, you too could juggle a bazillion browser windows at once.

get info



The new Apple System Profiler (version 2.1.2)—included with Mac OS 8.5—is a great troubleshooting tool. Apple System Profiler's main purpose in life has always been to gather tons of useful information about your Mac, but the new version adds AppleScript support, drag-and-drop support, more software information, Open Transport settings, and much more. The upshot? Run it and print out the result before you call tech support. That way, you'll know *all* about your Mac, and you'll be able to inform those who are trying to help you, too.—DR

The tip above is taken from Apple's Tech Info Library, which you'll find at <http://tiil.info.apple.com>.

We Have a Winnah!

Resourceful readers show their Croft

Last year we issued a challenge to our readers, egging them on to do their best Lara Croft imitation. The prize? A spiffy leather bomber jacket worth well over \$300! You folks sent in some killer entries (we fully expected to see bearded, barrel-chested men donning half-baked Lara getups, but most of you actually put some thought and work into the costume and photography). The competition was fierce, but we put it to a vote and picked out the winners.

GRAND PRIZE WINNER: Congratulations, Brandy Despeaux of Maryland! You win the Tomb Raider jacket and a copy of Tomb Raider II. Our staff admired your pluck and the strategic placement of duct tape on your belt buckle.

FIRST RUNNER-UP: Oliver Bewsey of Ohio coerced Amy (the model) and a coworker, Steve (the Harley owner), to help out, and the team worked hard enough to win first runner-up. They get a copy of Tomb Raider II and three Tomb Raider II T-shirts.

SECOND RUNNER-UP: We always wondered what Lara did when she wasn't raiding tombs. Apparently she hangs out with friends and enjoys a refreshing beverage. Marissa Nederhouser says that the beer "was not intended to be an accessory," but it worked out nicely regardless. Marissa also gets a copy of the game and a Tomb Raider II T-shirt.

HONORABLE MENTION: OK, we did get one male entry, so we felt we had to acknowledge his efforts. Nice work, Scott Wendler (also from Maryland)—your T-shirt is in the mail. And thanks to all of the other folks who entered.—DR



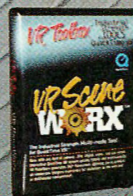
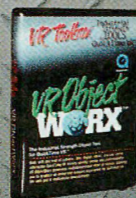
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A one-stop shop for your latest helping of random Mac info.

Super-Duper Sherlock Stuff

by Mark Simmons

What puts the *must-have* in *must-have upgrade*? If you were to ask Apple, it'd tell you the answer was Mac OS 8.5's Sherlock search utility. Steve Jobs claims Sherlock alone justifies OS 8.5's \$99 upgrade fee; then again, he also says that Internet Explorer is his browser of choice. At any rate, we've dug beneath the surface of Apple's superstar file finder and Net navigator to expose its myriad marvels.

Search Internet

Sherlock's Net-searching feature piggybacks on existing search engines, using Search Site plug-ins that tell Sherlock how to query each search engine and how to analyze the results. You can pad out your collection of plug-ins by visiting <http://www.apple-donuts.com/sherlocksearch>.

System Folder Smarts

Search Site plug-ins are one of the new file types Mac OS 8.5's autorouting feature supports. Drag 'em onto the System Folder, and OS 8.5 will redirect them to the Internet Search Sites folder; ditto for Appearance files, JPEG desktop pictures, preference files, shared libraries, and so on.

Click Me! No, Me!

Careful with that mouse! Click the search site logo, and it takes you to the search engine's results page; next to the logo is a big fat ad banner, inserted to mollify portal proprietors who might otherwise pitch a fit over lost ad revenue. Below the banner lies the matching link you seek.

Find by Content

The Find by Content tab is where the fireworks start. This text-searching feature showcases Apple's homegrown searching-and-summarizing technology, formerly known as V-Twin and now dubbed the Apple Information Access Toolkit. This modular search engine has previously been showcased in Cyberdog's mail client, in Web server utilities for Social Engineering's Quid Pro Quo and StarNine Technologies' WebStar, and in CTM Development's PowerMail. Once you've indexed the contents of your volumes, searches are almost instantaneous.

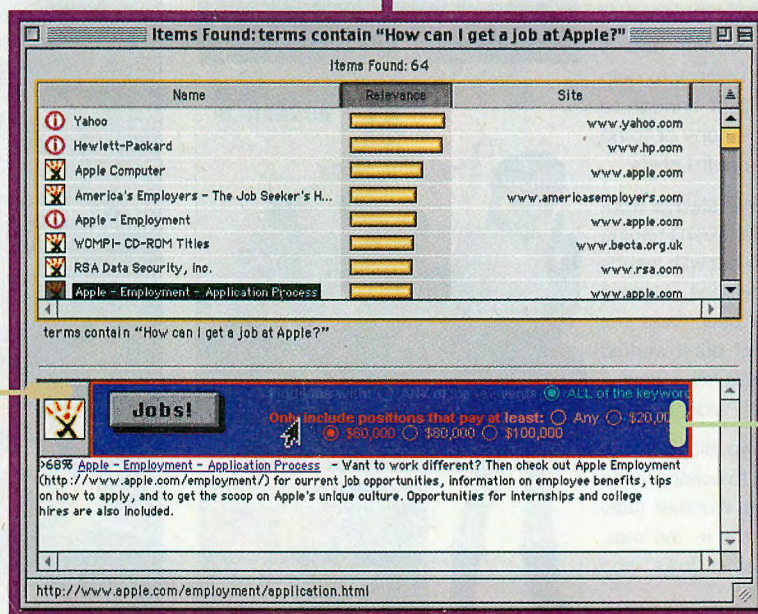
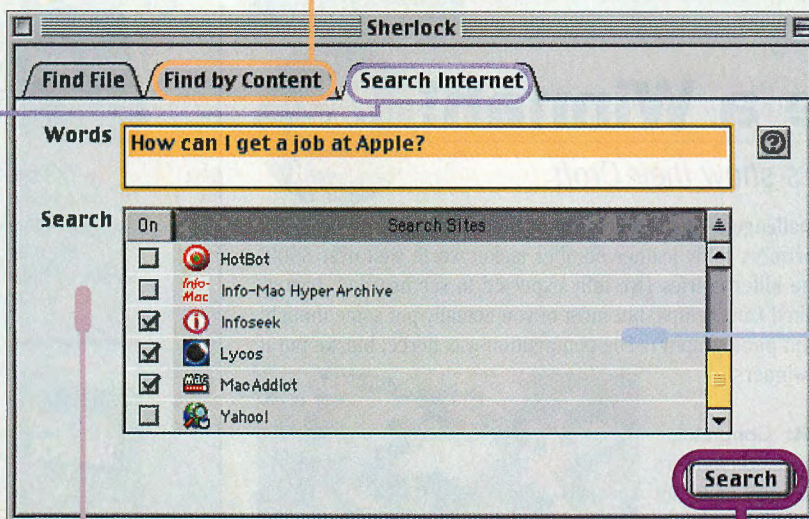
A Plethora of Plug-Ins

Too many search sites? Apple's scripting savants cooked up an AppleScript suite that lets you group plug-ins into swappable sets. Install OSA Menu Lite and launch these scripts to create, edit, and toggle search sets. Find them at http://www.apple.com/applescript/sherlock_sets.

- Activate Sherlock Search Set
- Create Sherlock Search Set
- Delete Sherlock Sets
- Edit A Sherlock Set
- Sherlock Scripts Read Me

Not a Banner Year

While the standard ad banner has become a familiar part of the Web surfing experience, its days may be numbered. Click-through rates—the percentage of viewers who click on the banner—have been dropping steadily, and are now approaching a 1 percent average. The solution some research firms propose? Not better, more-compelling banners, but hideous full-screen ads. You've been warned.



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why not choose EarthLink for your Mac!

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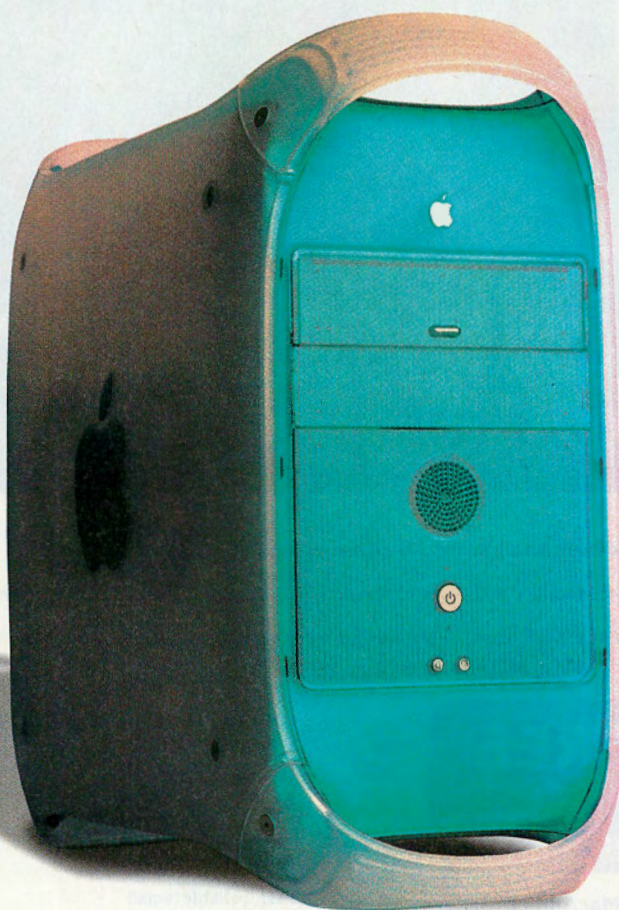


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Apple's new professional line symbolizes all that's right and good in Cupertino.



Photography: Aaron Lauer and Apple Computer

by Mark Simmons and David Reynolds

The Mac of the Future

It takes a little getting used to at first—even though the new G3 tower is the most powerful personal computer in the world, it's made out of *translucent plastic*, for crying out loud. The case has four handles, and from the side it looks like a tile from a space station. But once you get used to its visual oddness, tomorrow's Mac begins to grow on you, especially after you find out what's inside: a screaming-fast processor on a screaming-fast bus, with screaming-fast graphics—all for a starting price of \$1,599.

The blue-and-white G3 tower—and other surprises sprung at January's Macworld Expo in San Francisco—symbolizes

all that's right with Apple these days: innovative design, low price, high power, easy access, cutting-edge technology, and a clear focus. Now that Apple has ditched the doom-sayers and is once again leading the computer industry, the company has begun to create and innovate. And nowhere is this more evident than in the new Power Macintosh G3 minitower.

But the new G3 is just one part of a technicolor future that includes PC-crushing professional Macs, a rainbow assortment of iMacs, awesome displays, improved technology, renewed commitment to games, and Mac OS X server. Follow along as we show you how all of these pieces fit together to take Apple far ahead of the pack.

Power Mac G3 Choices The new G3 minitower is impressive—but how much will it cost you, and what can you get with it? Each tower ships with these standard features: an ATI Rage 128 graphics controller card with 16MB of graphics memory, two FireWire ports, two USB ports, an ADB port, a 100MHz system bus, three 64-bit 33MHz PCI slots and one 32-bit 66MHz PCI slot for graphics (which is already filled with the Rage 128 graphics card), 10/100BaseT Ethernet, and Ultra ATA-33 for hard drives. Don't get all weepy on us, but like the iMac these towers don't have floppy drives. You can customize your new tower in the Apple online store. Below are four of Apple's suggested configurations, with prices.

Choice 1

The standard features, plus

- 300MHz G3
- 64MB of SDRAM
- 6GB Ultra ATA hard drive
- 24X CD-ROM drive

Price: \$1,599

Choice 2

The standard features, plus

- 350MHz G3
- 1MB of backside cache
- 64MB of SDRAM
- 6GB Ultra ATA hard drive
- 5X/32X DVD-ROM drive

Price: \$1,999

Choice 3

The standard features, plus

- 350MHz G3
- 1MB of backside cache
- 128MB of SDRAM
- 12GB Ultra ATA hard drive
- 24X CD-ROM drive
- Zip drive

Price: \$2,499

Choice 4

The standard features, plus

- 400MHz G3
- 1MB of backside cache
- 128MB of SDRAM
- 9GB Ultra2 SCSI drive (with card)
- 24X CD-ROM drive
- Zip drive

Price: \$2,999

Inside the Beast

From its sloped handles at the top to its curvy bottom, the blue-and-white G3 minitower has smoothed out all of its rough edges—literally and figuratively. The easy-access motherboard is mounted on a fold-down door, which opens with the pull of a circular latch to reveal all of the tower's inner workings. While the G3 minitower can run circles around the fastest Wintel machines—Apple's Bytemark tests showed its PowerPC G3 processor having nearly a 2:1 advantage over a 450MHz Pentium II—it also puts an end to bloody knuckles when you're trying to install new RAM. With its state-of-the-art guts laid out on your tabletop, this shiny new computer becomes a road map to the new order in Macintosh hardware design. Follow along with us as we read the signposts.

G3 Microprocessor Still going strong, 300MHz, 350MHz, or 400MHz PowerPC G3 chips power the new towers. The chips poking out from under the heat sink are the G3's backside cache, which comes in either 512K or 1MB and runs at half the processor's clock speed. This G3 is also mounted on a ZIF (zero insertion force) socket, making for easy upgrades. Both Motorola and IBM supply the G3 chips. The chips from Motorola use the new copper technology, but a copper chip and an older aluminum chip at the same clock speed will tie each other in a race.

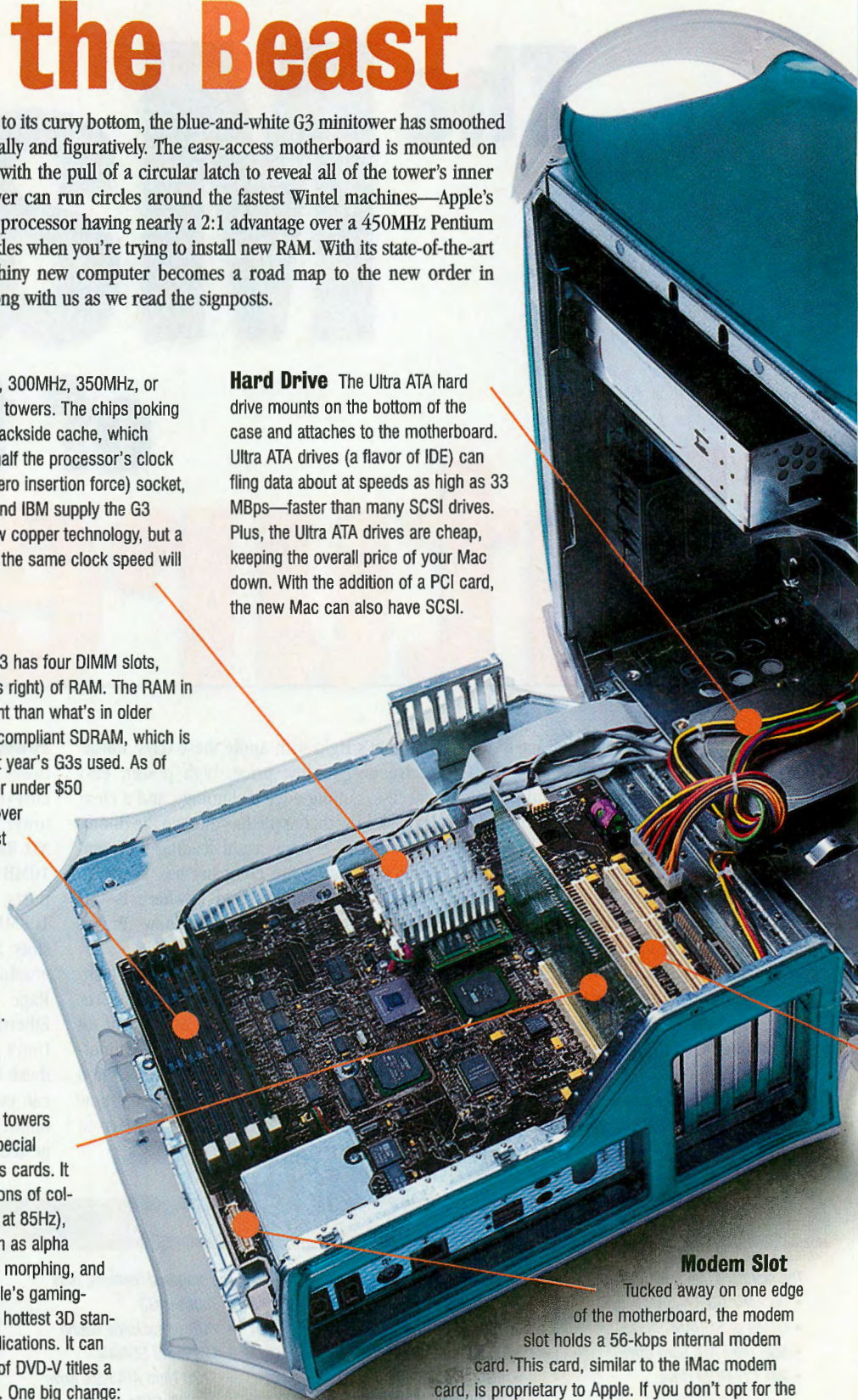
RAM Slots The new Power Macintosh G3 has four DIMM slots, which allow it to take up to 1GB (yes, that's right) of RAM. The RAM in the new G3 line, however, is slightly different than what's in older Power Macintosh G3 models. It's PC 100-compliant SDRAM, which is just a bit more expensive than the RAM last year's G3s used. As of this writing, you can get a 16MB module for under \$50 (a 16MB DIMM for the old G3s costs just over \$40). Expect RAM for the new tower to cost less as it becomes more standard in PCs. The new RAM also has a 400-MBps memory bandwidth, doubling the older Power Mac G3 RAM's 200-MBps limit. True tech-heads will be interested to know that the new towers use the same memory controller chip as the old G3s—the Grackle.

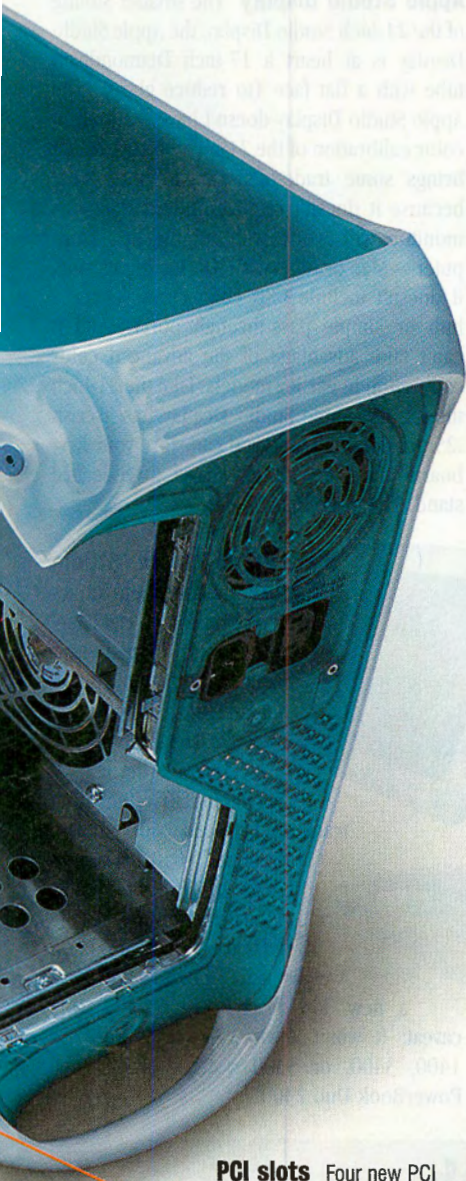
ATI Rage 128 Every one of the new pro towers will ship with this card preinstalled in the special 32-bit 66MHz PCI slot reserved for graphics cards. It has 16MB of video memory (handling millions of colors at resolutions of 1,600 by 1,200 pixels at 85Hz), and it supports all kinds of 3D effects, such as alpha blending, fog, reflections, shadows, texture morphing, and video textures. The card also supports Apple's gaming-oriented RAVE API, as well as OpenGL, the hottest 3D standard out there for games and other 3D applications. It can handle DVD-2 decoding, making playback of DVD-V titles a reality in your Mac if you have a DVD drive. One big change: The video-out port on the back of this card is VGA, the standard in the PC world. You'll need an adapter to connect older Apple monitors to the port, but fortunately the tower includes the adapter.

Hard Drive The Ultra ATA hard drive mounts on the bottom of the case and attaches to the motherboard. Ultra ATA drives (a flavor of IDE) can fling data about at speeds as high as 33 MBps—faster than many SCSI drives. Plus, the Ultra ATA drives are cheap, keeping the overall price of your Mac down. With the addition of a PCI card, the new Mac can also have SCSI.

Modem Slot

Tucked away on one edge of the motherboard, the modem slot holds a 56-kbps internal modem card. This card, similar to the iMac modem card, is proprietary to Apple. If you don't opt for the internal modem, beware—the new Power Macintosh G3 doesn't have serial ports, so older serial-based modems won't work without an adapter.





PCI slots Four new PCI slots grace the revamped G3.

Unlike the old G3s (which had three slots with 32-bit interfaces and ran at 33MHz), three of these slots are 64 bits wide (still at 33MHz). That simply means these 64-bit slots can move twice as much data per clock cycle. (Older 32-bit cards can still use this slot.) The fourth slot (home of the Rage 128 graphics card) has just the opposite specs: it runs at 66MHz (twice as fast), but it only has a 32-bit data path, making it effectively the same speed as the other three slots. Although this slot looks a lot like the Advanced Graphics Port (AGP) found on new PCs, Apple says it's not the same device.

Portable Feast

The new Power Mac G3 comes with several new ports—and gets rid of some old ones. Here's the skinny on what's on the back.

FireWire

Considering that Apple invented the FireWire interface, this high-speed technology has taken its sweet time coming to the Mac platform. The new Power Mac G3 is the first Apple computer to include it on the motherboard.

What it does: With a throughput of 50 MBps, FireWire is four times faster than 100-Mbps Ethernet and almost as fast as Ultra2 SCSI. Like USB, it lets you hot-swap devices, and drivers load themselves as needed. The FireWire bus supports up to 63 daisy-chained devices (including multiple Macs, as in a network), and it supplies up to 15 watts of power, enough to power a hard drive. Look for pocket-size, cable-powered FireWire hard drives this spring.

What you'll use it for: On the Wintel side, FireWire most commonly hooks up digital cameras and camcorders. Apple, thinking bigger (and *different*), is using it to replace the aging SCSI interface. Scanners, printers, storage devices, and any other peripherals you might once have hooked up to a SCSI port will now connect to FireWire. That means no more fiddling with ID switches and no more termination problems.

USB

After making its debut on the iMac, USB (Universal Serial Bus) has come to Apple's pro line, bringing with it a host of new peripherals.

What it does: Slightly faster than a 10BaseT Ethernet connection, USB connects peripherals such as mice, keyboards, joysticks, printers, and scanners to your Mac. You can plug devices into the bus and unplug them without turning off your Mac, and connect up to 127 USB devices at one time.

What you'll use it for: Mice and keyboards, mostly. Plus, with certain adapters, you can connect old-style serial devices to the USB port as well.

ADB

A holdover from earlier days—Apple included one ADB port on the new G3 tower.

What it does: You plug keyboards and mice into it, just like old times.

What you'll use it for: Apple included the ADB port mostly to provide compatibility with AppleVision monitors. Because some of these monitors use the ADB port to calibrate their color, and because many of Apple's professional customers rely on tightly controlled color, the ADB port survived this design round. Apple does have one warning, though—you shouldn't use USB and ADB keyboards and mice at the same time, as your Mac may get confused about which device is in control.

ETHERNET

Each new Mac will ship with 10/100BaseT Ethernet onboard.

What it does: It lets you connect to either a 10BaseT or a 100BaseT Ethernet network.

What you'll use it for: Shuffling files to and from a server, and playing network games. As a standard onboard option, the 100BaseT Ethernet frees up one of the PCI slots, and it can move big files at 10 times the speed of a 10BaseT connection. Apple is also offering 1000BaseT (gigabit) Ethernet as a build-to-order option.

Where's My...???

Apple discontinued a few of last season's standards in its new minitower. Here's what they are and what you can do about it.

SERIAL PORTS

The new USB port takes the place of the old serial port for modems, pen tablets, and other traditional serial devices. To connect serial devices to a new Power Macintosh G3, you'll need a serial-to-USB connector (both Keyspan and Momentum offer one) or a serial-port PCI card (check out Keyspan or Creative Solutions).

FLOPPY DRIVE

Apple axed the floppy drive from the latest round of Power Macs, as well as from the iMacs. A few companies now make USB floppy drives and floppy-compatible SuperDisk drives, so you'll have to buy one of those to use your floppies.

SCSI

Yep, SCSI has disappeared from the motherboard in high-end Macs. Apple is offering a \$49 SCSI-2 PCI card as a build-to-order option for basic SCSI connections, or you can buy the higher-end Ultra2 SCSI card as a build-to-order option.

See-Through Displays

When you've reinvented yourself as a design-driven computer maker, you can't go and blow the whole look by letting people hook up a boxy beige monitor to your sleek, color-coordinated product line. Thus, Apple has accompanied the new Power Macintosh G3 with a matching line of three new Studio Display monitors. All three use the same plastics as the new blue-and-white Power Mac G3 line, and thus look like big iMacs on stands. In deference to Apple's current aversion to overspecific product names, they all bear the same "Studio Display" moniker as Apple's earlier flat-panel display. Here's how to tell them apart.

Apple's new-age monitors are built to match the new towers with their futuristic translucent outer shells.

Apple Studio Display with ColorSync Technology

The Cadillac of displays, this monitor boasts a 21-inch Sony Trinitron tube, built-in ColorSync-based calibration (with an eye-catching one-push calibration button on the front of the case), and a built-in four-port USB hub. All 65 pounds of this enormous machine sit on a three-legged tilt-and-swivel base for easy orientation. The 21-inch display works only with Macs that have built-in USB—which limits it to the new Power Macintosh G3 line. (It doesn't support older Macs with USB upgrade cards, and the iMac doesn't have external video.) Like the older AppleVision monitors with their ADB tethers, the 21-inch Studio Display uses USB to communicate with the CPU and keep the monitor's colors true (see "How Monitors Stay Feeling Fresh" for more on how this works).

There's space under the monitor to store your keyboard, too. You can haul it home and call it your own for \$1,499—not a bad deal for such a big display.

Apple Studio Display The smaller sibling of the 21-inch Studio Display, the Apple Studio Display is at heart a 17-inch Diamondtron tube with a flat face (to reduce glare). The Apple Studio Display doesn't have the built-in color calibration of the 21-inch display, which brings some trade-offs. On the plus side, because it doesn't require built-in USB, this monitor will work with almost any computer—Mac or otherwise. On the minus side, it doesn't include USB connectors (either a hub or simple pass-through ports), and it can't take advantage of the advanced color calibration in earlier models. Like the 21-inch model, the Apple Studio Display has a crisp .25mm dot pitch, and you can store your keyboard under its tilt-and-swivel three-legged stand. The price? Only \$499.

Flat Panel Apple Studio Display

Renamed and attractively reskinned, the Flat Panel Apple Studio Display now matches the new towers in its plastics, color, and design. The internals are the same, though: a 15.1-inch TFT (thin film transistor) screen with multiple resolutions (640 by 480 to 1,024 by 768, its native mode). It's still only a little over two inches thick, it weighs just 12 pounds, and it's at a new, low price—just \$1,099. One caveat: It won't work with the PowerBook 1400, 3400, or 5300 systems or with the PowerBook Duo 2300.



How Monitors Stay Feeling Fresh

The ADB connector behind old AppleVision displays and the USB connector in the new 21-inch Studio Display aren't there just to provide a convenient place to plug in peripherals. The monitor actually uses them to communicate with the Macintosh to which it's connected, keeping the colors clean and true.

Here's the deal: Inside the new 21-inch ColorSync monitor is a device that stores certain parameters (such as the age of the phosphors in the tube) and

measures the electrical current flowing into the tube. The phosphors change as they get older, and as they change they put out less of their assigned color: red, green, or blue. The problem is that not all three phosphor colors age at the same rate, so as a monitor packs on the years, it starts to take on a color cast.

The USB connection (which replaces ADB) acts as a sort of wrinkle cream, preventing the unsightly effects of aging. With its internal electronics, the monitor

talks back to the Mac, keeping it updated on the current status of the phosphors. The Mac can then compensate for those changing colors by altering the electrical current flowing to the monitor.

If you have a monitor without the ADB or USB connector, you're stuck either adjusting the color manually by twiddling knobs and poking buttons, or using an external photometer to send data back to the computer so it can make more-accurate color adjustments.

Flavorful iMacs

Apple's makeover of its 1999 desktop product line extends beyond the professionally oriented Power Mac G3; the company also modestly overhauled its much-acclaimed, best-selling consumer model, the glorious gumdrop-shaped iMac. While there are a few changes under the hood, the first thing you'll notice is the new colors—five of them, to be exact. This year, iMac shoppers will be able to choose among blueberry, strawberry, tangerine, grape, and lime, with the translucently fruity hues replacing 1998's Bondi blue panels.

In addition to this eye-catching aesthetic change, the new one-size-fits-all iMac has some slightly retailed innards. You'll find a 266MHz PowerPC G3 chip in the '99 model, in place of last year's 233MHz processor. Apple boosted the internal hard disk from 4GB to 6GB, and stripped away a couple of the iMac's vestigial features—the underutilized IrDA infrared port, and the infamous mezzanine connector (bad news for third parties who developed expansion cards for this unsupported mystery slot). The new model sells for \$1,199, a \$100 price cut.

Interim Apple CEO—or, as he jokingly described himself, “iCEO”—Steve Jobs introduced the polychromatic new product line at his Macworld Expo keynote address, and updated attendees on the iMac's standout sales. The 278,000 units sold during the first six weeks of availability qualified the iMac as a strong starter, but the additional 500,000-plus iMacs that moved in the following quarter proved it could go the distance. After 20 weeks of iMac sales, Jobs said, the total stood at 800,000 units sold—an average of one every 15 seconds. Third-party research confirms the iMac's success, with ZD Market Intelligence reporting that the iMac was the top-selling desktop computer in U.S. superstores for each of its first three months.

While the sheer numbers sold qualify the iMac as a break-

through product for Apple, its true significance goes beyond mere unit sales. The iMac's daring embrace of the fledgling USB has made Apple once again a technological trendsetter. Its consumer appeal has sparked an increasing flood of third-party products, and it continues to draw new users to the Mac: Apple's December research indicates that 32 percent of buyers were first-time computer owners, and another 13 percent defected from the Wintel platform. The iMac has also fulfilled its promise of universal Internet connectivity, with 66 percent of iMac users getting online the first day they used their machines, according to Jobs.

Last but not least, the iMac has realized Jobs's dream of endowing the computer industry with a sense of fashion. Now that



Apple has retired the aquatinted Bondi blue model, owners of first-generation iMacs may one day find themselves in possession of a genuine collectible.

iMacs Old and New

Here's an at-a-glance comparison of the iMac's three generations (after only six months total on the shelves).

1998 (revision A)	1998 (revision B)	1999
<ul style="list-style-type: none"> • 233MHz PowerPC G3 • 512K backside cache at 117MHz • 66MHz system bus • 32MB RAM, expandable to 128MB • 4GB hard disk • 24X CD-ROM drive • ATI Rage IIc Graphics accelerator • 2MB video memory, expandable to 6MB • 15-inch diagonal CRT display • Mezzanine slot • Crash resolution device: Paper clip • Mac OS 8.1 • Ice and Bondi blue • IrDA 	<ul style="list-style-type: none"> • 233MHz PowerPC G3 • 512K backside cache at 117MHz • 66MHz system bus • 32MB RAM, expandable to 256MB • 4GB hard disk • 24X CD-ROM drive • ATI Rage Pro Turbo Graphics accelerator • 6MB video memory • 15-inch diagonal CRT display • Mezzanine slot • Crash resolution device: Power button • Mac OS 8.5 • Ice and Bondi blue • IrDA 	<ul style="list-style-type: none"> • 266MHz PowerPC G3 • 512K backside cache at 133MHz • 66MHz system bus • 32MB RAM, expandable to 256MB • 4GB hard disk • 24X CD-ROM drive • ATI Rage Pro Turbo Graphics accelerator • 6MB video memory • 15-inch diagonal CRT display • No mezzanine slot • Crash resolution device: Power button • Mac OS 8.5 • Ice and blueberry, grape, tangerine, strawberry, or lime
Price: \$1,299	Price: \$1,299	Price: \$1,199

Mac OS X Server

Although Mac OS X Server won't ship until February, Apple chose to announce it in tandem with the new Power Mac G3. Apple repositioned this next-generation operating system, formerly known as Rhapsody, as a big brother to the forthcoming Mac OS X. Whereas Mac OS X will target Macintosh owners of every stripe—at least those who own G3-based Apple Macs—Mac OS X Server is designed to host Web sites and workflow systems, manage Mac networks, and perform other heavy-duty tasks befitting a server OS.

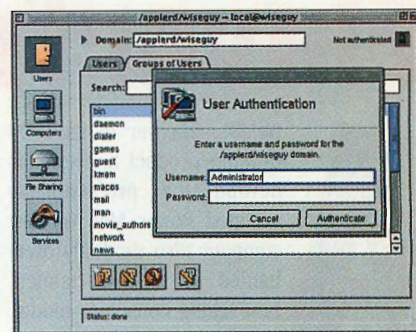
Mac OS X Server is the first operating system Apple will ship based on its much-hyped Rhapsody project and the technology it acquired when it purchased NeXT Software in December 1996. As such, Mac OS X Server acts as a preview to Apple's 21st-century operating system product line. It is based on a Mach kernel, which provides the stability of memory protection and the performance benefits of preemptive multitasking—features

that previously gave Unix and Windows NT an advantage over the Mac OS. On top of this run a Yellow Box environment that hosts applications written for NeXT's OpenStep operating system, a Blue Box that handles traditional Mac OS programs, Berkeley Standard Distribution Unix for those who like that sort of thing, and a Java virtual machine.

Apple has added a handful of powerful services to this robust foundation. Mac OS X Server includes Apache 1.3.3, the open-



Mac OS X's user interface looks a lot like it did in Rhapsody—that's because it is Rhapsody.



Mac OS X Server can manage lots of different users for the same Mac—even if they're accessing it remotely.

source Web server that's quietly become the industry standard, as well as Apple's own WebObjects 4.0 software for creating powerful, dynamic Web sites. For the first time, Mac owners can run both the industry-leading heavy-duty Web server *and* the most advanced Web-application builder. Mac OS X Server includes rudimentary FTP and mail functionality as well, but you'll need to turn to third parties for advanced file-transfer and mail-server solutions.

For Mac networks, Mac OS X Server provides file-sharing services over AppleTalk and TCP/IP. When used in conjunction with an iMac or the new line of Power Mac G3s, it can provide a novel and powerful NetBoot feature that lets dozens of networked Macs start up from a single System Folder stored on the server. Rather than having to update every machine in a classroom, lab, or office, administrators need only worry about a single centralized system. Users can log in by name to restore their own unique preferences, desktop arrangement, and shared volumes. NetBoot makes managing 50 or 100 Macs as easy as managing one, while simultaneously allowing users to customize their systems and access them from any machine on the network.

While Mac OS X Server isn't particularly relevant to the average Mac user, its robust architecture and top-tier Web-serving features make it a compelling option for network administrators. Apple has sweetened the deal with a \$999 sticker price that—unlike earlier versions of AppleShare server software—covers an unlimited number of users. A complete server bundle (hardware and software) will include a 400MHz Power Mac G3, 256MB of memory, and two 9GB Ultra2 SCSI hard drives, all for just \$4,999. Only desktop Power Mac G3s (both old and new varieties) officially support the operating system.

Where Will They Be Now?

With Mac OS X Server's advent imminent, you may be wondering what's up with other elements of Apple's system software and server strategy. Here's a status report.

Mac OS X When the general-purpose Mac OS X arrives around the end of the year, it will combine the server version's robust foundation with a more polished user experience and all the features of the Mac OS we currently know and love. It will also provide a Carbon environment, which allows slightly modified Mac applications to take full advantage of the Mach kernel's horsepower (see "Overture to an OS," Sep/98, p32). Traditional Mac applications, Carbon-compatible programs, and Yellow Box software will run transparently side by side; in Mac OS X Server, by contrast, the Blue Box takes over the entire screen for its Mac OS mode.

Mac OS X Server In the near future, you can expect to see a variety of publishing systems and workflow management tools from third parties for this OS. Canto Software has already promised a Mac OS X Server version of its Cumulus asset-management system, and Xinet has done the same for its family of publishing servers. Apple guarantees many more such announcements when Seybold Seminars Boston kicks off on March 1, 1999. Mac OS X Server itself will continue to evolve, and its core system software will eventually synchronize with the regular Mac OS X.

AppleShare IP Apple's other server product will stick around for the time being. In addition to being less complex than Mac OS X Server, AppleShare IP supports Windows clients and includes a complete bundle of Web, mail, FTP, file-sharing, and printer-sharing services.

Rhapsody The operating system Apple was planning in 1997 has morphed into Mac OS X Server. Though Apple originally planned Intel versions of Rhapsody and its Yellow Box application environment, the final Mac OS X Server will run only on Macs.

Serious Fun and Games

Even when he's in professional mode, interim Apple CEO Steve Jobs can't quit thinking with his joystick. While introducing the 1999 model Mac—a machine aimed primarily at designers, multimedia pros, and business users—Jobs segued smoothly from the machine's powerful built-in graphics acceleration to the Mac's future as a gaming platform. And man, did he have plenty to crow about.

Not accidentally, Apple's powerhouse professional Power Mac G3 also happens to be a state-of-the-art gaming machine. After all, shoot-'em-up aficionados stress their computer's 3D rendering performance as much as any CAD guru would. The key feature that makes the new Power Mac G3 a gamer's dream machine is the ATI Rage 128 graphics accelerator on the included video card. Backed up by 16MB of dedicated video memory, the Rage 128 provides what may well be the best 3D performance in the industry (see *Power Play*, Feb/99, p72, for more information), and Apple is the first computer company to bundle this accelerator with its machines. (Owners of older PCI-equipped Macs can assuage their jealousy by picking up one of ATI's PCI-based add-in cards—just visit <http://www.atitech.com> or call 905-882-2600 for details.)

Apple made another breakthrough by endorsing the OpenGL standard. Developed by Silicon Graphics, OpenGL is a library of

3D-rendering, texture-mapping, and special effects functions that has become a favorite among game and 3D modeling developers. Until now, 3D software vendor Conix (<http://www.conix3d.com>) provided the only Mac implementation of OpenGL. At January's Macworld Expo, Jobs announced that Apple had licensed OpenGL and would incorporate it into future system software releases, making it the 3D standard for the Macintosh platform. A developer release should be available as you read this, and both the next release of Mac OS 8 and the debut release of Mac OS X will include the final version.

While choosing the OpenGL standard over its own QuickDraw 3D technology must have been a tough call for Apple, the move is winning rave reviews from developers. No less a luminary than gaming industry trendsetter and id Software cofounder John Carmack—lead programmer of *Wolfenstein 3D*, *Doom*, and the *Quake* series—took the stage at Macworld Expo to vouch for the Mac as a first-class gaming platform. He announced that id Software is developing the eagerly anticipated *Quake III Arena* simultaneously for Mac and PC. Since id Software relies on OpenGL for its game development, producing a Mac version of its new title has suddenly become a much more feasible exercise. Carmack noted during his public presentation that the Mac-specific code in current development versions of *Quake Arena* amounts to only about 15K.

Carmack's in-person endorsement—he's not only a longtime Apple critic but also noto-

riously averse to public speaking—was a landmark event for Apple and the Mac.

Of course, game developers haven't exactly been cooling their heels waiting for Carmack's nod. Inspired by the runaway success of the consumer-oriented iMac, the Mac gaming industry has been churning out bushels of hot new titles (see "Games by the Gallon" for new and upcoming releases). With consumers snapping up iMacs by the hundreds of thousands while Apple cranks out top-class gaming hardware and catches the OpenGL wave, this is shaping up to be the year we get serious about fun.

Games by the Gallon

Here's a list of new Macintosh games shipping or announced at January's Macworld Expo. We expect announced titles to ship by May at the latest, but you should know by now this isn't an exact science—after all, we've listed Blizzard's *Starcraft* in our December games guide two years running, and we don't even want to start on *Starship Titanic*...

TITLE	PUBLISHER
AGE OF EMPIRES	MacSoft
BATTLEZONE	Activision
CREATURES 2	Mindscape
DARK VENGEANCE	MacSoft
FALCON 4	MacSoft
FLY	Gathering of Developers
HERETIC 2	Activision
IMPERIALISM II	Mindscape
INTERSTATE 76	LogicWare
JAZZ JACKRABBIT 2	LogicWare
KLINGON HONOR GUARD	MacSoft
MYTH II: SOULBLIGHTER	Bungie Software
QUAKE II	id Software
QUAKE III ARENA	id Software
QUEST FOR GLORY 5	Sierra Software
RAILROAD TYCOON II	Gathering of Developers
SIN	Activision
SIM CITY 3000	Maxis
STARCRRAFT	Blizzard
	Entertainment
RAINBOW SIX	MacSoft
TOMB RAIDER III	Aspyr
ZORK GRAND INQUISITOR	Activision

OpenGL? Is That a Convertible?



Developed by Silicon Graphics in 1992, this set of 2D and 3D application programming interfaces (APIs, in geek speak) has won near-ubiquitous support from the computer industry. OpenGL bears endorsements from such big names as Cray Research, Hewlett-Packard, IBM, Intel, Microsoft, Sony, and Sun Microsystems, and a

host of CAD, 3D modeling, and gaming developers use it. On the Mac platform, Hash's Animation: Master, Strata's StudioPro, NewTek's LightWave 3D, Autodesk's formZ, and the X-Plane flight simulator have already taken advantage of OpenGL's bounty of modeling and rendering features by licensing an OpenGL library that Conix developed.

Functionally, OpenGL is similar to Apple's QuickDraw 3D, and thus displaces the company's homegrown technology. However, there's still a role for Apple's QuickDraw 3D RAVE (Renderer Acceleration Virtual Engine). This set of low-level graphics routines serves as an intermediary between the raw power of a graphics accelerator such as ATI's Rage 128, and higher-level software such as OpenGL and QuickDraw 3D, allowing these applications to reap the full benefits of hardware acceleration.

Jobs on Games



After the flurry of gaming announcements made at January's Macworld Expo, Apple graciously invited several Imagine Media publications (including *Next Generation*, *Games Business*, and *MacAddict*) to talk to Apple interim CEO Steve Jobs about games and the Mac. Here's what he had to say.

MA: A couple of years ago Apple said that it was serious about games, but nothing was really accomplished. How do we know it's for real this time?

SJ: I can't speak for what happened a few years ago. I apologize for that, but I wasn't around. All I can do is tell you what's happening now, which is a bunch of people here really like games, and also, a bunch of people here are really smart and know that their customers really like games.

We also want to be good at system performance and graphics in general, and games are a wonderful way to pound the system and the software to its limits. Even those amongst us who are not the hardest-core

gamers see tremendous advantages in trying to be the best gaming platform.

We've been working with ATI for almost a year, and betting that together we could pull off [putting] the Rage 128 [in shipping Macs] in this time frame. This is a heart transplant of our highest-revenue-producing product. And we built that heart transplant on the Rage 128 because we really wanted to leapfrog the PC industry, and we really wanted to be the first people to use this. We also really believe if you want to make it easy for the consumer, you have to build it in.

We talked to some of the best game authors, who told us if we could build something great [inside the Mac], it would make it so much simpler for the consumer and for them, because they don't have to write a zillion drivers for a zillion 3D systems and cards. Now they don't have to write any drivers. We're going to do all of that. We're going to put OpenGL in there and we're going to have all the drivers written. All they have to do is just make OpenGL calls and everything else is done. There is no system configuration. There is no card to plug in. There are no drivers to load. There are no libraries to load. It's just all going to work.

We're doing a lot of work on Game Sprockets now. Plus, the USB stuff is perfect for games. There are all sorts of controllers coming out now, and again, you can plug in as many things as you want—up to 127 controllers if you want. So a lot of the other strategies we're pursuing fold really well into helping to make a better gaming platform.

MA: Is Apple encouraging everyone to write for the Mac, or is it focused on big-name games?

SJ: When you're trying to come back into something, you go after the most popular games and the best games for two reasons: First, because they are the most popular,

they're going to serve more customers than the games which are less popular; second, in general, you'll find that those are the legendary game authors, and if the legendary game authors think it's cool to come back to the Mac, then they're going to be role models for a lot of the other game authors.

If you were starting a record company and you could get, say, The Rolling Stones to come to your record label, that would be an important thing, not just because they sell a lot of records, but because they would be a magnet to attract others. So you would tend to go after the most popular and some of the best, which is what we're doing. As we succeed at that, then the funnel will widen.

MA: Still, in the past, developers have been reluctant to develop for the Mac, given its small installed base...

SJ: The active installed base of Macs is around 25 million, and I don't think that's a small number.

MA: It's not a small number, but relative to PCs...

SJ: Well, it is smaller than the PC [base], but it's a market that buys more software per computer. It's a market that's on the Internet at a higher rate per computer. It's a market that is filled with the more creative segments of society. It's a market that has a lot of energy right now and is cheaper to market to than the PC market. There are a lot of advantages in writing for the Mac right now. We're on the upswing, and with the iMac, in [terms] of sales, we're bringing in a higher percentage of new customers than the PC crowd is.

MA: Is Apple trying to get developers to create Mac-only, Mac-first games?

SJ: Clearly, we would like some unique development down the road, but what we're doing right now is trying to work with the top-tier developers, listen to them very carefully, and build the best gaming platform in the

Photography: Aaron Lauer



world so they are attracted to write for it. As we continue to improve and bring the kind of technology to this that I think Apple can bring, we will start to get some unique things on the Macintosh, or quite possibly, we'll see games that are cross-platform but have some unique features that only come alive on the Macintosh.

MA: Why was it so important for you to get id Software's Quake 3 for the Mac?

SJ: Quake 3 has a lot of attributes we like. It's going to have some of the hottest 3D graphics ever. It's an OpenGL-based product. It's based on an engine that [is] licensed to other developers who can work very rapidly to make other games that will run on the Mac. And we think [id Software founder John] Carmack is sort of a legend among other gaming legends.

MA: John Carmack has joked that the new G3 Mac has everything but a three-button mouse. Do you plan to introduce one?

SJ: [No], but that's the beauty of USB: You can go out and buy anything you want. If there were some really popular game controller that we could make a contribution in, we might consider making one.

MA: What advantage does Apple have that will allow it to succeed with games?

SJ: Apple is the only company left in this business that makes the whole widget, like BMW does, you know? Imagine being a car company where you get your engine from this Intel engine company, right? And you get your body design and your seats and everything else from this other company called Microsoft, and you bolt them together and you throw in the spare tire and you ship the car. That's what everyone else in this industry does. Apple, however, makes everything. We do the hardware, we do the software, we do the design, and we do the marketing. We do everything.

A perfect example would be USB, right? With the Macintosh, we looked at serial and it was pretty old, so we decided to jump to USB. If we had left the old serial ports on the iMac, it would have been really difficult to get USB peripherals on the iMac. Everyone would have just kept doing the old thing. So we took the serial ports off and we said we were really going to commit to this.

Do you know who invented USB? It was invented five years ago by a little company called Intel. [Someone from a well-known PC company] called me the other day and [said], "We've been trying to make USB happen for years, and we couldn't, because in the PC industry it's like trying to herd cats," and everyone has their own agenda. So Apple was able to align the hardware, the software, the marketing, the developer relations, and go

and make an agenda item happen. The PC industry in five years could not do that. So Apple is leading the PC industry in USB. The same thing is happening with FireWire. Apple can pick a handful of initiatives each year and drive them in every layer of the product, and that is worth an incredible amount when you are trying to bring innovation into the market.

We're the last people [to make] the whole widget; that was berated a year and a half ago as Apple's downfall. [Yet] I believe it is Apple's greatest strength. Apple can take responsibility for the whole user experience and the whole developer experience. That's incredibly valuable, especially as you move more to the consumer market. You can take an iMac out of the box and in 10 minutes be on the Internet, and everything about that experience is under our control. If you can't—if it takes you a half an hour—it's our fault. We can't blame anyone else. We can't say, "Well, call Microsoft" or, "Call these other people." It's our fault, right? But we can fix it, too. It is now the easiest computer in the world to take out of the box and get onto the Internet. Every survey is showing that.

MA: How will you convince people that the Mac is what they want to use for games?

SJ: I think people are pretty smart, so the first thing we have to do is to deliver on the promise. The second thing we have to do is to talk to the influencers. The number one group of influencers are the game authors themselves, right? The second group of influencers are people like yourselves. Do a comparison and see what you think. Write it up and let your readers know.

MA: Is Connectix's PlayStation-emulator Virtual Game Station a jump start for the machine game crowd?

SJ: I don't know. Clearly, people don't buy PCs to run Sony PlayStation with, OK? If they want to run Sony PlayStation games, they can buy a \$150 Sony PlayStation a lot cheaper



than they can buy a PC. So they are buying a PC to run the higher performance PC games. [The Virtual Game Station] is not the cake. It may be the frosting on the cake, which I think is wonderful. Frosting tastes good. I think it will be pretty popular.

MA: What were the critical moments in bringing Apple back?

SJ: We've got a really good team. There are a lot of great people at Apple who couldn't [do great work] because there was no plan. Now there is a very clear plan and people are working really hard and they're really excited about it and they're able to get some great stuff done.

The other thing I'm very proud of is that Apple has had the courage of its convictions in the last 18 months. I mean, look at this stuff. You don't get stuff like this by copying the other guys. You get this by having ideas and debating things and deciding what you're going to do, and then not really knowing how they're going to turn out, but just believing they are the right thing to do and believing they are going to turn out well and having the most-talented people you can find agree, "Yes, this is the way to go," and then going that way. I'm very proud of the innovation Apple is bringing to the market.



Apple is the only company left in this business that makes the whole widget.



music

Non-Musician's Guide to

Making Music

By Kris Fong

The warm smell of beer and bodies fills the air as you struggle to hold your ground, pinned tightly between Mohawk man and some chick with a nose ring. Suddenly, the lights go out and the crowd surges forward. A deafening 110 decibels of underage hysterics pierce your eardrums as the band struts onto the stage and a driving beat pounds into your chest. Thousands of hands reach out in desperation, clawing furiously toward their heroes. And then jealousy rears its ugly head. Why can't this be you?

Oh, but it can, and you don't even need to own an instrument. All you need to create music is your Mac, Myriad Software's \$15 music-generating shareware Melody Assistant, and your ears. We get you started by showing you how to write and create a music composition with a drum track and a simple bass line. We even give you tips for adding in a melody at no extra charge. Plus, we provide you with a beginner's crash course in music notation, note values, and time signatures. So clean out the wax and let's go!



FIND MYRIAD SOFTWARE'S Melody Assistant 3.0.1, Bias's Deck II 2.62 demo, Opcode's Vision DSP demo, Bitheadz' Unity DS-1 demo, and Pocket Fuel's RADS samples on The Disc.

Lay Down Your Beat



music

When creating any musical composition, you start by laying down a drum track. The drums are key because they establish and maintain the tempo and rhythm all of the other instruments follow to keep time. In a bare-bones set, you have three basic types of drums to beat on: the bass drum, the snare, and the hi-hat, which you can play open or closed. The bass drum—the deep, throbbing pulse you usually hear blaring from a passing low-rider—anchors the timing of a song. The snare tends to follow the bass drum in most patterns when it's not pimped out for drum rolls and lame jokes, while the crisp, controllable pair of stacked cymbals known as the hi-hat are used to vary the intensity, dynamic, and groove of a beat.

After you get to know your drums, you need to figure out what to do with them. But in order to figure out what types of drums to use and how to place them in the composition, you must first decide on the style of music you want to create. Do you want to write a rock or pop tune? Something funkier? Maybe a techno groove, or perhaps something heavier? A ballad? The type of music you choose will affect where you enter your beats in the drum tracks.

Try creating your own pattern by placing your bass drum in different segments of its track and then adding the snare, hi-hats, and any other percussion you'd like. Aim for a groove that will allow your body to move comfortably with it. If you feel yourself having to conform spastically to your creation, you may want to rethink it before continuing.

We Got the Beat!

Here's a peek at drum patterns for three different styles of music, taken from the Melody Assistant sound file called Drum Patterns.MUS that you'll find on The Disc. Take a close look at how the bass drum, snare, and hi-hats relate in the first two examples. Though the snare stays the same, the changes in the bass drum and hi-hats produce a totally different feel. In the third example, by substituting the bass drum and snare with low and high conga drums, the funk beat takes on a picante flavor. Adding other percussion instruments adds more spice to this salsa beat. Hear the difference for yourself on The Disc.

If you're really stuck trying to come up with your own drum patterns, make note of the beat placements these examples display. Then fire up Melody Assistant and place the beats into the corresponding drum tracks using a note tool in the composition window. We'll let you copy us this time, but you're on your own during the test.

Rock Beat

Open HH	
Close HH	
Snare drum	
High Conga	
Bass Drum	
Low Conga	
Count:	1 a & a 2 a & a 3 a & a 4 a & a

THIS IS A DRUM PATTERN for generic pop and rock music. It's just a nice, steady beat...

Funk Beat

Open HH	
Close HH	
Snare drum	
High Conga	
Bass Drum	
Low Conga	
Count:	1 a & a 2 a & a 3 a & a 4 a & a

THE SNARE STAYS THE SAME, but the variation of the beat on the bass drum and the addition of hi-hat notes for a quicker pace turns a ho-hum beat into something you can dance to.

Salsa Beat

Open HH	
Close HH	
Snare drum	
High Conga	
Bass Drum	
Low Conga	
Count:	1 a & a 2 a & a 3 a & a 4 a & a

CHANGING THE INSTRUMENTATION of the bass drum and snare into conga drums (a type of hand drum) gives the funk beat a completely different sound and style. Break out the margaritas.

Musical Clue

Feeling musically challenged? Does the thought of writing notes leave you in knots? Head over to "Meet the Staff" on page 32 for a quickie catch-up on Music 101.

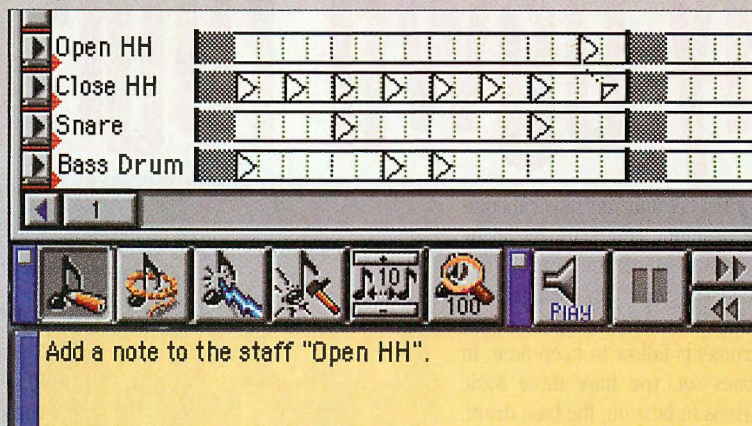
Make Your Own Drum Track

At the bottom of Melody Assistant's notation screen are four segmented horizontal bars you use to create your drum pattern. Each bar represents a different drum instrument—the default instruments are bass drum, snare, open hi-hat, and closed hi-hat—and each segmented square on each drum track represents one 16th note (see "Take Note" on page 31 for note values).

To add a drum beat into your composition, click the Add button at the bottom of your screen, place your beat cursor over any of the segmented squares, and click. A triangular symbol marks where you place each beat. To hear your pattern at any time, click the Play button at the bottom of your screen.



Step 1



Start a basic drum pattern by laying down the bass drum. The black divisions of each drum track signify a quarter note count. Typical placement for a standard rock beat would be on quarter note counts one and three, and on the eighth note beat prior to count three. In other words, if you imagine each segment is labeled from 1 to 16, you need to place a beat in segments 1, 7, and 9 of the bass drum track.

The snare usually follows the bass drum on counts two and four for a rock beat, so you need to place beats on segments 5 and 13 of the snare track. Wrap up your pattern by placing a closed hi-hat beat on every other segment starting with 1 (1, 3, 5, 7, and so on) and an open hi-hat beat on segment 15 for a little finesse touch. (Note: The more hi-hat notes you add, the more driven your beat will sound. Think punk rock.)

Step 2



Once you're satisfied with your pattern, copy the measure by clicking on its measure bar, located at the top of the notation window and labeled 1. This highlights the entire measure. Duplicate your pattern onto the next seven measures by clicking on each corresponding numbered measure bar and pasting (Command-V) for a total of eight measures. Congratulations—you can now march to the beat of your own drummer.

Ain't Got No Rhythm?

To get a better understanding of what a beat feels like, just stride across the floor—every step you take is a beat. Count aloud—"one, two, three, four"—for each step you take, and keep repeating your count of four as you walk. Each step defines a quarter note. Keep walking. Now turn your head so you're facing left on count two and facing right on count four. Your head turns are half notes. Clap your hands

twice for every step you take, but keep it consistent—these are eighth notes. If you apply this to drumming, you can associate your steps with the bass drum, your head turns with the snare, and your claps with the hi-hat. This exercise gives you a general understanding of how these instruments relate rhythmically. Just don't bump into any walls! (Then again, what's a drum beat without a crash?)

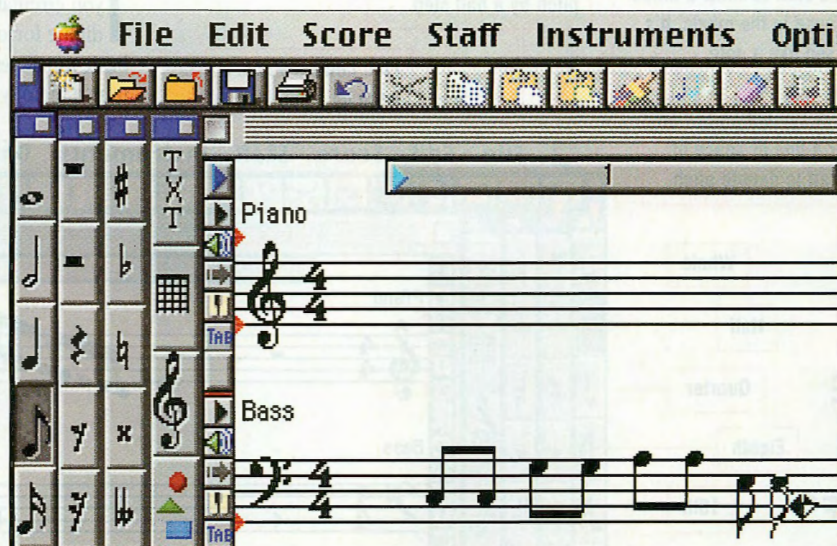
Bass Experiments



Now that you've got your drum track down, it's time to boost the bottom end by creating a bass line. The bass line helps tie the drum track together with a low-toned melodic groove, which is often just a single note line. Since you are creating music without real instruments, you need to enter your bass line on the staves in Melody Assistant's composition window. In other words, you must painstakingly write out each note, note value, and rest needed to move the tune out of your head and into your Mac.

Listen to your drum track and try singing a bass line over it. When you've got a melody you like, place its notes on the staff. Unless you're blessed with perfect pitch, you will have to suffer through a lot of trial and error. Have patience. Experiment with the note and rest tools to better understand how these affect your bass line's rhythm. Copy and paste measures to save time on repetitious note entering.

To get started, select a note value from the Notes toolbar. (Your cursor will take the form of a note.) Place the note on the staff by clicking the note cursor on a line or space. Where you click will determine your note's pitch—the higher up on the staff you place a note, the higher the pitch. If you're unsure of note



USE YOUR EIGHTH-NOTE TOOL to write a simple bass line.

pitch, use the Quarter Note tool and click on four different places on the staff. Click the Play button to hear the differences in the notes.

If you're new to notation, you can experiment a little by entering notes on the lines of the staff using only your Eighth Note tool. Enter in two of every note you select for a

total of eight notes to fill one whole measure. (If you make a mistake, press Command-Z to get rid of it.) Click the Play button to hear your bass line.

Once you've got something down that you're happy with, you're ready to put the icing on the cake.

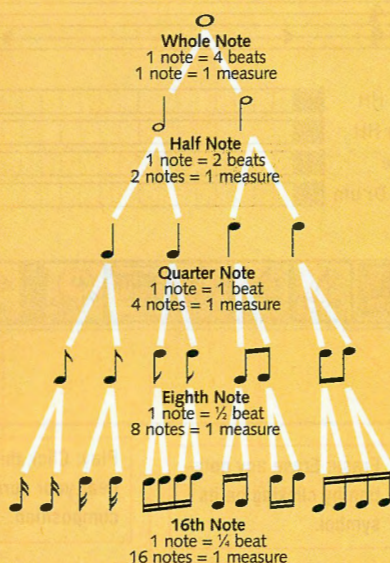
Take Note

The illustration at right shows you what each note looks like, its value, and how it relates to the others in 4:4 time. Rests work exactly the same way as notes—they just look a little different (see below).

RESTS

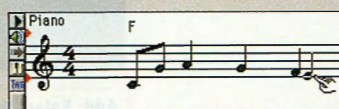
	Whole Rest
	Half Rest
	Quarter Rest
	Eighth Rest
	Sixteenth Rest

NOTES



Quick Tip

You can move notes that you've already placed by clicking the Select button at the bottom of your screen. Holding down any note in Select mode turns your cursor into a finger you can use to push your note to any line or space on your staff.



MAKE A MISTAKE? Give it the finger!

Meet the Staff



Rest: A symbol placed on the staff to show a timed pause in the music. It's used like a note.

Sharp: Raises a note's pitch by a half step.

Flat: Lowers a note's pitch by a half step.

Note: A symbol placed on either a line or space of the staff to denote pitch.

If the last time you wrote a note on the staff was that memo you circulated on office hygiene, then you're a prime candidate for our mini music primer. Not only do we call out basic music terms and symbols for you, but we show you how to use Melody Assistant to write a tune all your own.

NOTE AND REST NAMES

Whole

Half

Quarter

Eighth

16th

32nd

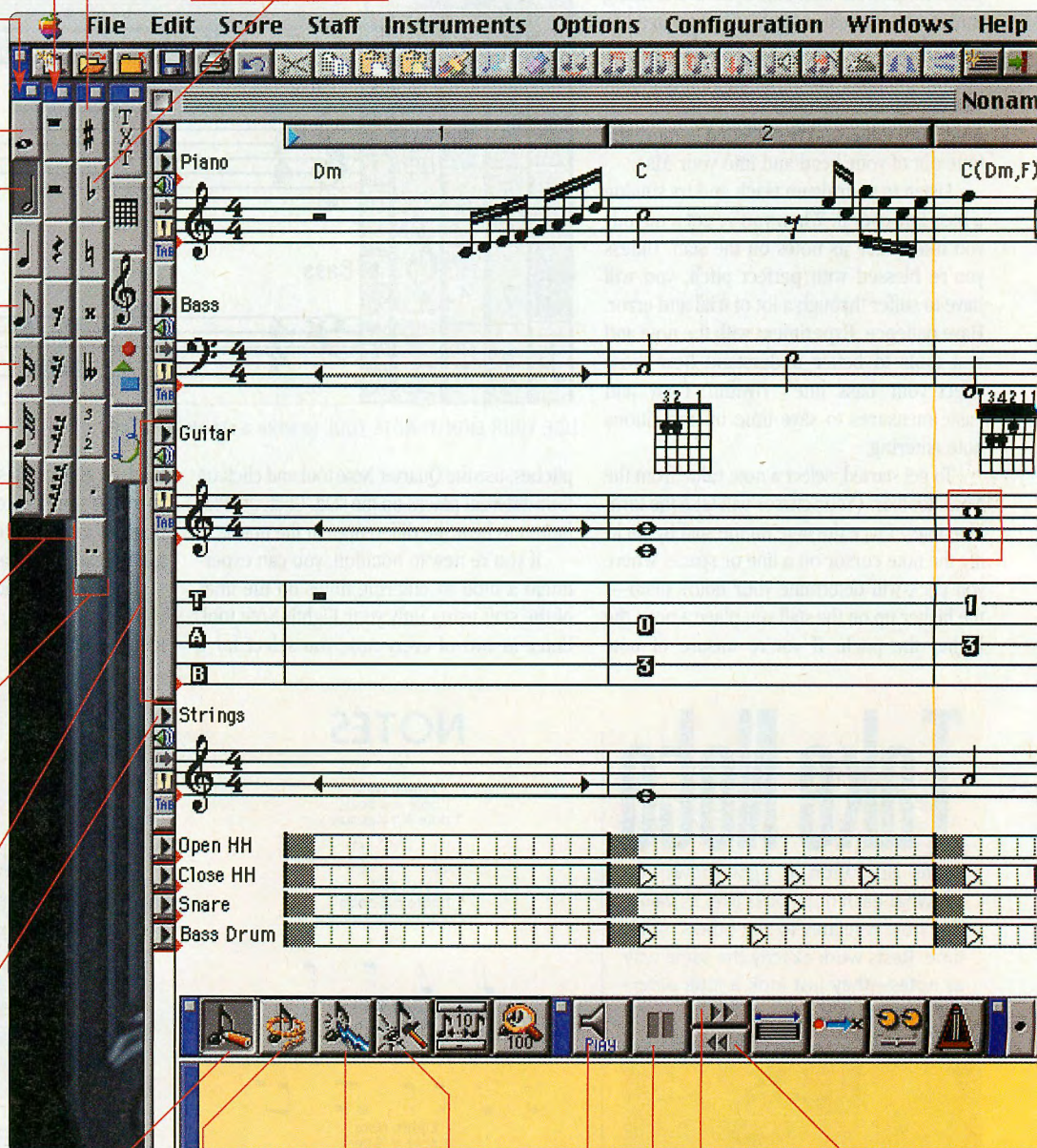
64th

Notes and Rests toolbars: Select designated note or rest values from here to add their symbols to any staff.

Accidentals toolbar: Select a corresponding symbol to modify a note's pitch or modify the timing of a note.

Guitar: One of five Melody Assistant default instruments (all defaults shown here).

Edit triangle: Edit any instrument assigned to the staff by clicking its triangle and selecting from the pull-down menu.



Add: Select this to add notes and rests to the staff.

Erase: Erase any notation by clicking on its symbol.

Play: Click this to hear your current composition.

Fast Forward: Scroll your composition forward.

MODES TOOLBAR

Select: Select symbols to cut, copy, erase, or move.

Try: Click on any note or chord to hear it.

Pause: Pause or unpause playback.

Rewind: Scroll your composition backward.

NOTATION LOCATION

Treble clef: Indicates that this entire staff will dictate the mid to high notes. It supports notes such as those played by a flute, the top three strings of a guitar, your right hand on the piano, clarinets, trumpets, and violins. Think Mariah Carey, Garth Brooks, and AC/DC.

Bass clef: Indicates that this entire staff will dictate the mid to low notes. It supports notes such as those played by a bass, the bottom three strings of a guitar, your left hand on the piano, bassoons, trombones, and cellos. Think Barry White, Johnny Cash, and Type O Negative.

Time signature: Establishes the rhythm of a composition. The top number states how many beats per measure a song has. The bottom number signifies which note equals one beat. Standard pop music is usually written in 4:4 time—four beats per measure with the quarter note establishing the beat.

Staff: The canvas on which you enter notes and other musical symbols to build your song. The staff usually consists of five lines and four spaces. Each line and space represents a different note, or pitch, depending on which clef appears at its beginning. The plural of staff is staves.



THESE ARE THE NOTE NAMES found on the designated lines and spaces of the treble and bass clefs.

Chord diagram: A finger placement illustration that shows guitarists how to play a chord. Vertical lines represent strings, horizontal lines represent frets, and dots indicate finger placement.

Tablature: Guitar notation is often written in this format. The six lines represent the six strings of a guitar, while the numbers indicate which fret to finger on that particular string. Melody Assistant can automatically convert your standard notation into guitar tablature.

Chord: Two or more notes played together.

Drum tracks: Place your beats here to form your drum pattern.

Measure: A measure, also referred to as a bar, is a time-defined group of beats that contains a primary accent and one or more secondary accents. A song generally consists of a number of measures separated by bar lines.

Dialog window: Displays the current mode you're in and offers balloon-type help.

Down to the Count

When writing music for any instrument, it's important to know how to count to the beat. By counting aloud, you will be able to establish and sense where accented notes should fall without making your composition sound like a bad case of the hiccups—highly unpredictable and annoying.

When you absentmindedly tap your feet to music, you are tapping to its beat. If you count aloud "one, two, three, four" repetitively instead of tapping your feet, you will be counting music in 4:4 time, which is the count for many pop and rock songs. Your "one" count is your primary accented beat, followed by "two, three, four," the remaining secondary accents. (This is a general count that many conductors use.) Try counting aloud to the radio or a favorite CD. Musicians who play to eighth notes—a primary count for drummers—will add "and" between the beats of their count like this: "one and two and three and four." Your count should be twice as fast as the first one. A 16th-note count will add "uh" to the count. It is vocalized as "one uh and uh two uh and uh three uh and uh four uh and uh" (written out as 1 a & a 2 a & a 3 a & a 4 a & a). This can be quite a mouthful!

Bring In the Band



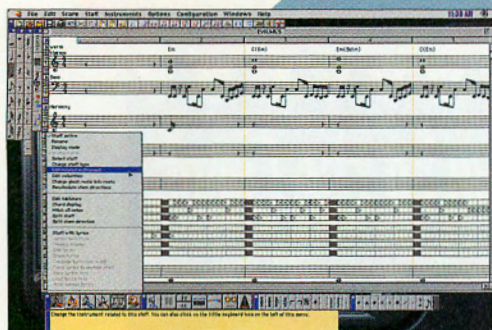
With the rhythm section complete, you're ready to make your composition soar with melody, which can involve using one instrument or more. If you're writing a pop or rock tune, you might choose to use a distorted guitar and synthesizer. If you're going for a trip-hop feel, try mixing different percussive sounds from the electronic drum kit and the analog-style synth patches. If the symphony breathes deeply in your blood, a whole orchestra awaits—Melody Assistant contains a bank of over 285

instruments and effects. These break down into 16 categories and contain 8 sets of drums that feature more than 65 percussion instruments in each set. Whew.

Follow the same notation principles you applied with your bass line to all of your new instruments. Keep in mind that every instrument has its own unique characteristics—the fluid sweeping notes of a violin, the drone of a synthesizer pad, the breathiness of a flute. How well you stay true to it, or how much you defy it, is your choice. While emulating the

phrasing style of a sax player with the saxophone patch may give your piece a lot more authenticity, playing chords with the sax patch can also make your piece more interesting.

There really are no hard-and-fast rules when creating a melody. All the printed words you find in any book or magazine can't explain what any given melody should sound like or how it should be written. That's up to you to decide and everyone else to appreciate. So choose your instruments, pick out your notes, and trust your ears.

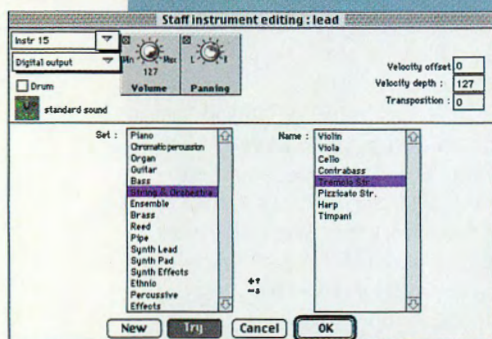


Make Your Melody

If you don't have a melody ready, you can experiment by swapping instruments in and out of your composition. Although Melody Assistant's default melodic instruments are guitar, bass, piano, and strings, you can choose a different instrument by pressing the marker next to the instrument's name and, from the display menu that opens, selecting Edit Related Instru-

ment. This opens an instrument selection window that allows you to test out a variety of sounds and make your selection. Check out the real-life images above for examples.

When you're finished laying down all of your instrumentation, you can save your song as a Melody Assistant file for future editing, or if you register Melody Assistant, you can export your composition as an AIFF or WAV file. Exporting your song will allow you to share your music over the Web or use it in any multimedia project. And if you have the hardware to do it, you can even put an album's worth of songs on your very own CD. Who needs a band when you've got a Mac?



Is It Live...or Your Mac?

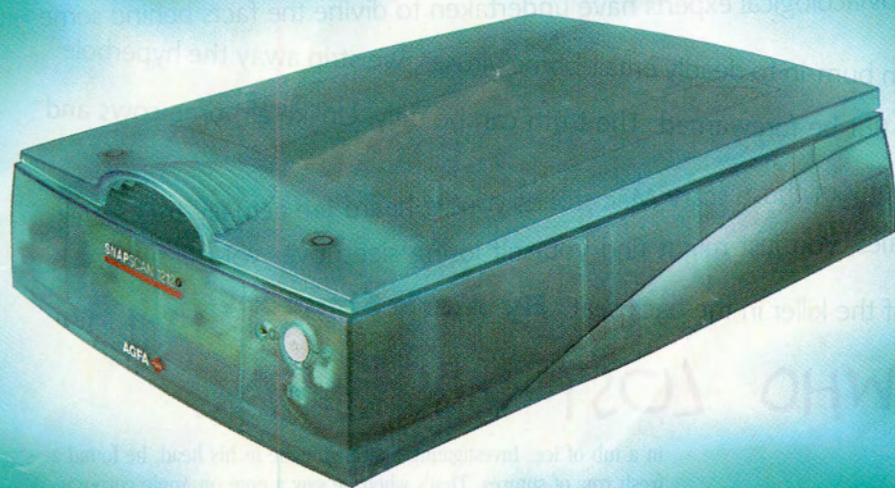
If you can write music notation in your sleep, you may prefer to work with samples—high-quality digital recordings of real instruments. Unlike the emulated, synthesized sounds of most software instrument packages, samples give you unlimited creativity in your writing, while sounding very real. Used with sequencers, samples let you create music not even the most accomplished musician could ever play.

Samples are usually implemented using a MIDI (Music Instrument Digital Interface) device such as a keyboard—the kind with the black-and-white keys, not the one that comes with your Mac. But you can import samples into audio sequencing programs, such as Bias's Deck II (\$399, <http://www.bias-inc.com>, 800-775-2427), Mark of the Unicorn's Digital Performer (\$795, <http://www.motu.com>, 617-576-2760), Emagic's Logic (\$449, <http://www.emagic.de/english/index.html>, 04101-495-0), Steinberg's Cubase VST (\$799, <http://www.steinberg.de>), Opcode's Vision DSP (\$495, <http://www.opcode.com>, 650-429-2400), and even Myriad Software's Melody Assistant (\$15, <http://www.myriad-online.com>). Not all of these programs support all sound file formats, so you'll have to check the requirements.

To sample some sound samples, check out the collection of drum loop samples from Pocket Fuel's RADS CD (\$59.95, <http://www.pocketfuel.com>, 888-643-8263) on The Disc. These samples contain bass drums, snares, or both, though the RADS CD contains a huge collection of drum sounds. Try importing a few samples into the Bitheadz Unity DS-1 software sequencer (\$449, <http://www.bitheadz.com>, 831-465-9898) or any other software sequencer that supports Sound Designer II files, to get an idea of how you can manipulate and change the structure of each sample's sound wave.

Digital Media Editor Kris Fong just got a crash course in programming and binary numbers and can now only count to one.

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Macintosh

URBAN LEGENDS

YOU KNOW
WHICH ONES
TO FEAR.WE TELL
YOU WHICH
TALES ARE
TRUE!FIND A DEMO
of After Dark's
MacDim on
The Disc.

It happened to a friend of a friend of a friend, of course—the CD-ROM tray mistaken for a cup holder, the guy who filled up all three of his PCI slots, FileMaker's satanic new logo.... There are a million of these stories, endlessly circulating through user groups and email chains. But which are mere folklore, and which conceal grains of truth?

The perplexity ends here. Our Macological experts have undertaken to divine the facts behind some popular urban legends. From screen burn-in to deadly email-borne viruses, we strip away the hyperbole and dig out the real dirt for you. But be forewarned: The truth can be ugly. Unlike airborne cows and goat-sucking Chupacabras, many of those scary Mac stories you've heard are actually true. After perusing some of these terrifying tales, you just might find yourself losing sleep over your lightning-

susceptible phone line instead of the killer in the back seat. **By Mark Simmons**

THE MAN WHO LOST HIS MAC

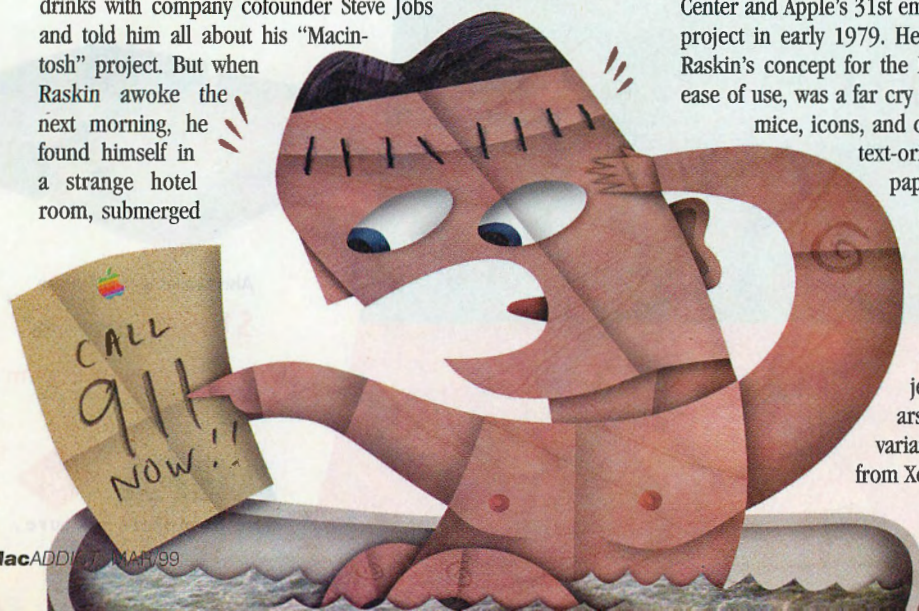
ACCURACY: Partial**SCARE FACTOR:** Low

THE LEGEND: Way back in the early days of Apple Computer, there was this guy named Jef Raskin who had an idea for a new kind of personal computer. Abuzz with his grand vision, Raskin went out for drinks with company cofounder Steve Jobs and told him all about his "Macintosh" project. But when Raskin awoke the next morning, he found himself in a strange hotel room, submerged

in a tub of ice. Investigating a strange ache in his head, he found a fresh row of sutures. That's when he saw a note on Apple corporate stationery, informing him that he should contact the paramedics at once—because Jobs had stolen his idea right out of his head!

THE FACTS: Jef Raskin, a veteran of Xerox's Palo Alto Research Center and Apple's 31st employee, did indeed launch the Macintosh project in early 1979. He also came up with the cute name. But Raskin's concept for the Macintosh, while very much focused on ease of use, was a far cry from the Mac we know today. Eschewing mice, icons, and other fancy frills, he favored a minimalist text-oriented interface akin to a blank sheet of paper (a paradigm ultimately expressed in the Raskin-designed Canon Cat, introduced in 1987 and then mysteriously killed six months later).

When Jobs hijacked the Macintosh project in 1981, he made it into a reprise of the ill-starred Lisa, turning Raskin's project into something utterly different. Scholars of urban legend may be reminded of the variant story, "How Steve Jobs Stole the GUI from Xerox PARC."



Illustrations by Andrew Skwish

THE EMAIL HOOK

ACCURACY: Slight

SCARE FACTOR:

Substantial

THE LEGEND: A teenage couple was working late in their high school's computer lab. The girl was nervous, since her friends had been warning her about viruses and malicious hackers, but her boyfriend merely scoffed at her fears. "Don't be silly," he said, "viruses can't get you unless you launch an infected application. Just run any shareware you download through a virus scanner, and you'll be fine." Thus mollified, the girl wandered off to get a soda while the boyfriend checked his email. But when she returned, he was gone. She tinkered with her homework while awaiting his return, gradually growing conscious of a quiet "thud...thud...thud." Mustering her courage, she tracked down the source of the noise and found her boyfriend banging his head against the wall outside the lab. "I didn't know," he sobbed. "How could it delete all my files and erase the hard disk? How could a message called 'Good Times' be so evil?"

THE FACTS: For years, warnings of email viruses that

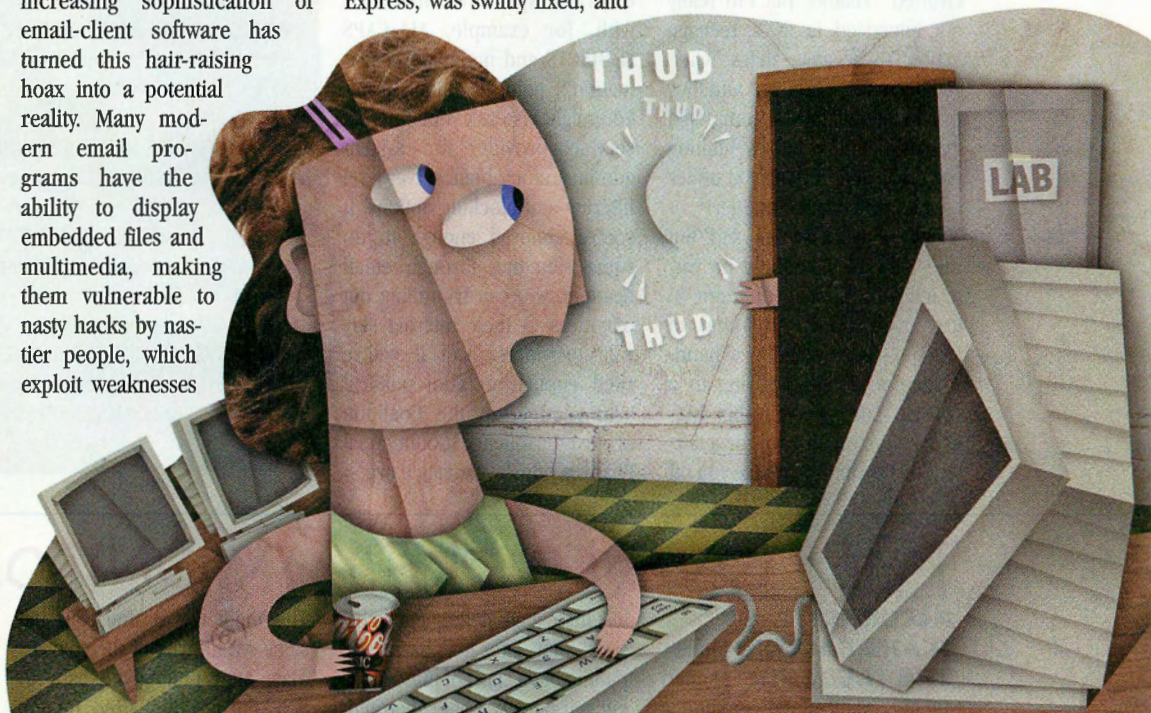
infected your machine when you merely looked at the accompanying message were rightly dismissed as hoaxes. After all, a virus can only infect you through very specific means—launching an infected application, opening a Microsoft Office document with an autoactivating macro virus, or most recently via QuickTime's well-intentioned AutoStart feature. However, the increasing sophistication of email-client software has turned this hair-raising hoax into a potential reality. Many modern email programs have the ability to display embedded files and multimedia, making them vulnerable to nasty hacks by nastier people, which exploit weaknesses

in the program's code.

In July 1998, some ill-natured individual discovered that messages with very long attachment name tags could induce certain email clients to crash. The attached program could then activate itself, ransacking and pillaging at will. The only Macintosh program vulnerable to this specific attack, Microsoft's Outlook Express, was swiftly fixed, and

it appears no user was actually harmed by a booby-trapped message of this kind.

As email clients go beyond simply displaying text messages, other new avenues for mischief may open up, once again making the legendary killer email a genuine possibility. But until then, panic-inducing hoaxes are more of a menace than actual email client vulnerabilities.



THE BOY WHO BLEW UP HIS MAC

ACCURACY: Partial

SCARE FACTOR:

Way spooky

THE LEGEND: Once there was a bad little boy who didn't hearken to the wisdom of his elders. For his 13th birthday he received a RAM upgrade, and such was his eagerness to install the RAM that he neglected to follow any of the recommended safety precautions. Shuffling his feet back and forth on the carpet in sheer anticipation, he ripped open the Performa's case without donning a grounding strip, popped in the RAM, fired up the computer, performed a last-minute keyboard

switch without shutting the machine down, ate Pop Rocks, and chugged a can of soda. Lo and behold, a massive electrical surge thoroughly cooked the Performa's insides.

THE FACTS: Unlike the Pop Rocks-and-Pepsi yarn, static electricity mishaps and peripheral hot-swapping complications are remote but genuine possibilities. A wrist-wrapping grounding strip isn't really necessary for your case-opening escapades—you can discharge enough of your static electricity by touching the Mac's power supply or another exposed metal component. Just remem-

ber to disconnect the power cable first!

Adding and removing keyboards, mice, and other Apple Desktop Bus peripherals without shutting down your Mac is one of those things that Apple warns us not to do. You can get away with this reckless behavior most of the time, but in the rare event that your ADB fuse blows, you won't be able to fix it without replacing the entire motherboard. Fortunately, the newfangled Universal Serial Bus (USB) and FireWire let you hot-swap peripherals with impunity.

And while we're talking about exploding Macs, note the

potential threat of electrical surges. Local power quirks, flaky wiring, and nearby lightning strikes can all send power surges barreling down the line to your Mac to commit fuse-blowing mayhem. A surge protector—for maximum reliability, a robust three-line model—can intercept these electrical surges before they reach your computer. As if that weren't enough to fret about, the Apple Tech Info Library (<http://til.apple.com>) also notes one apocryphal incident in which a lightning strike blew out a Mac via the phone line connected to its modem. Yikes!

SPAM IN A GANG

ACCURACY:

True, more's the pity

SCARE FACTOR:

Fairly creepy

THE LEGEND: On the lonely back streets of the information superhighway, they wait. Eager initiates of the Unsolicited Commercial Email clan, they blunder through your mailbox like a night driver with no headlights. Woe betide you if you respond with a civilized "Thanks, but I'm really not interested in 'XXX Teenage Action'"—because that's when you become their target, and they won't rest until they've completed their initiation ritual by hunting you down and burying you under a blizzard of spam. Shudder!

THE FACTS: It's sad but true—there's just about no way to tell a bulk email operator to leave you alone. Any kind of reaction, be it sending a handwritten response, replying to a "please take me off this list" address, or signing up for a service that promises to take you off

spammers' mailing lists, merely confirms that you read the whole message and guarantees that the signal-to-noise ratio of your inbox will get even smaller. The propensity of spammers to forge return addresses means that complaints are also unlikely to reach the proper authorities.

The easiest tactic in the war against junk mail is to ignore such messages, setting up filters to trash spam-like messages with, for example, ALL-CAPS SUBJECTS and multiple!!! exclamation!!! points!!! automatically. You might also ask your Internet service provider or system administrator about server-level filtering and blocking options. If you're annoyed enough to do some sleuthing through email headers, you can try ratting out offenders to their Internet service providers. And if you're riled enough to take political action, look up the Coalition Against Unsolicited Commercial Email at <http://www.cauce.org>.

STRANGER THAN FICTION!

If you thought the rumors and half-truths surrounding the Macintosh were bizarre, wait till you read up on the facts. They're weird and wacky, but we can assure you they're true.

THE IMAC'S CANDY-COLORED CASE is made from a polycarbonate composite that is also used to make bullet-proof glass.

APPLE BURIED 2,700 UNSOLD LISA computers in a high-security landfill somewhere near Logan, Utah.

APPLE'S WARRANTY DOESN'T COVER damage caused by installing RAM or any other kind of "upgrades and expansions."

THE CATHODE RAY TUBE INSIDE YOUR MONITOR can zap you with up to 30,000 volts—even if the monitor is turned off.

IF YOU TAKE YOUR MAC TO THE SOUTHERN HEMISPHERE, magnetic field variations will create gnarly image distortions.

CLARIS ORGANIZER 2.0 ONLY ACCEPTS DATES between 1904 and 2040; any other dates entered "will revert to a random year," according to Apple's Tech Info Library.

THE OVERCOOKED MONITOR

ACCURACY:

Partial

SCARE FACTOR:

Modest

THE LEGEND:

Excited about a night alone together, a young couple recruited a neighbor's daughter to baby-sit their kids while they went out for the night. No sooner had the parents

left than their delinquent babysitter dug into her backpack, pulling out a stash of mind-altering substances. A little after midnight, the parents returned to find the sitter passed out on the sofa. In a panic, they rushed upstairs to check on the baby.

The toddler was fine, but the same wasn't true of their Power Mac. After putting the baby to bed, the girl had fired up the Mac and then left it on all night. To their horror, the parents discovered that a permanent image of the Mac's desktop had been burned into the monitor. If only they'd invested in a screen saver!

THE FACTS: Monitor screen burn-in—a condition in which the same image is projected onto a cathode ray tube for so long that some of the screen's phosphor is destroyed—is a genuine, albeit wildly overstated, hazard. Burn-in is caused by bright, nonmoving images, which is why screen savers generate constantly changing images with a dark background.

However, it would take months, not a single night, to cause this condition on a modern color monitor. Unless you never turn off

your monitor, installing a screen saver is more an exercise in entertainment than in damage prevention. Lowering your monitor's brightness level is a more mundane way to stave off burn-in, and Apple's Energy Saver control panel saves watts as well as pixels.

The liquid crystal displays used in PowerBooks and Apple Studio Displays are also susceptible to burn-in effects, though of a temporary nature. LCD burn-in will occur when a static image is displayed for more than a day or so, but the screen will recover after a few days' or weeks' rest. Active-matrix LCDs suffer burn-in from dark images, while bright images burn passive-matrix LCDs.

Senior Editor Mark Simmons once downloaded a shareware program, but when he got home, he found out it had been dead for years. Spooky!



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MovieWorks 4.1

MULTIMEDIA

COMPANY: Interactive Solutions

CONTACT: 925-734-0730, <http://www.movieworks.com>

PRICE: \$99.95 (SRP)

REQUIREMENTS: 68040 or faster, System 7.6.1 or later, 8MB of RAM, 5MB of free hard disk space, double-speed CD-ROM drive, QuickTime 2.5 or later



FREAKIN' AWESOME
The most valuable products, the coolest gizmos.



SPIFFY
A solid offering. Overall a good investment.



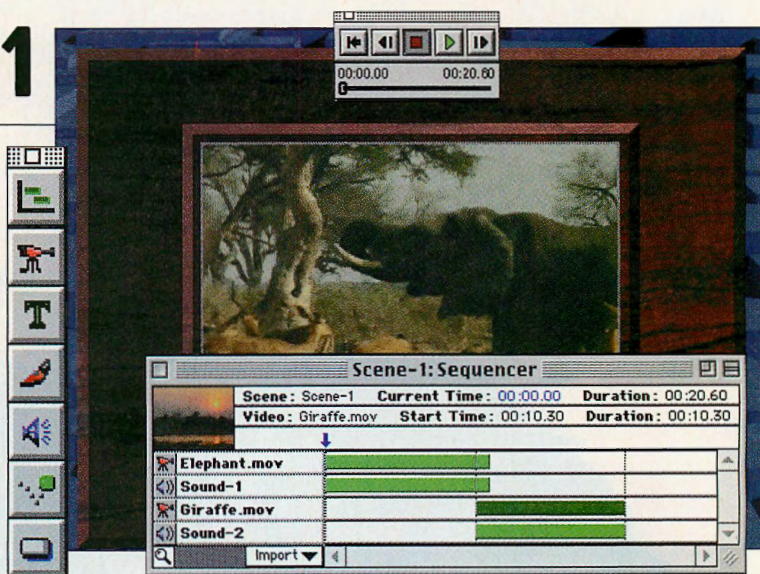
YEAH, WHATEVER
A few good features, but generally a waste of time and money.



BLEEH!
We hate to even blotch our pages with the thing.

MovieWorks, an application suite like ClarisWorks or Microsoft Office, brings multimedia authoring to the masses. Interactive Solutions has assembled a group of applications—video recording and editing; sound recording and editing; and painting, animation, and interactive authoring—into a package that's similar to Macromedia's Director Studio but takes just an hour to learn and costs only about \$100.

Each stand-alone application in the suite does its job well, but the sum productivity is much greater than its parts. You use the Sound program to record and edit audio, the Paint app for painting, and the Animator for



2D cel animation. The key to creating a good suite of applications is integration: Each program in a suite should interact seamlessly with the others, and in this respect MovieWorks shines.

The cornerstone of MovieWorks is the Composer application, where you bring together all the media elements you've created in other MovieWorks applications. You make MovieWorks projects with a series of individual scenes that can include QuickTime movies, animation, sounds, text, pictures, and buttons. Scenes can contain common elements and background. You construct them in a timeline-based palette called the Sequencer, which lists all the elements currently in a scene both chronologically and hierarchically. Here, you can set or adjust a variety of settings that control how the movie plays back, including the duration, start time, stop time, and layer order of any element.

To manage all the media elements in a scene or project, you use the Composer's Objects and Scenes windows. The Objects window shows a folder full of all the media assets available in a given scene. Graphic objects appear as small pictures of themselves, and text objects as representational icons. Each object also has a small icon in

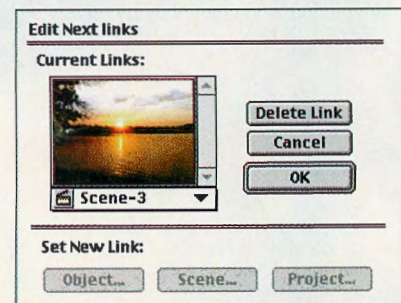
MOVIEWORKS IS A SURPRISINGLY ROBUST MULTIMEDIA PRODUCTION SUITE with audio, video, paint, animation, and authoring components.

its upper left corner to indicate what type of element it is. The Scenes window presents a visual index to all the scenes in a project.

From Composer you can import media files into the project, set a projectwide background image, add text and captions, create hyperlinks between scenes, add animated paths for graphics to follow, export projects as QuickTime movies, and create stand-alone players for distribution. The Effects Sequencer also gives you control over func-



IN COMPOSER, THE OBJECTS WINDOW DISPLAYS a graphic representation of all the media elements in a scene, with a small icon in the upper left indicating the media type.



CREATING LINKS BETWEEN SCENES IS EASY with MovieWorks' links dialog box. In a few clicks, a user can assign a play, stop, quit, or navigation function to any graphic.

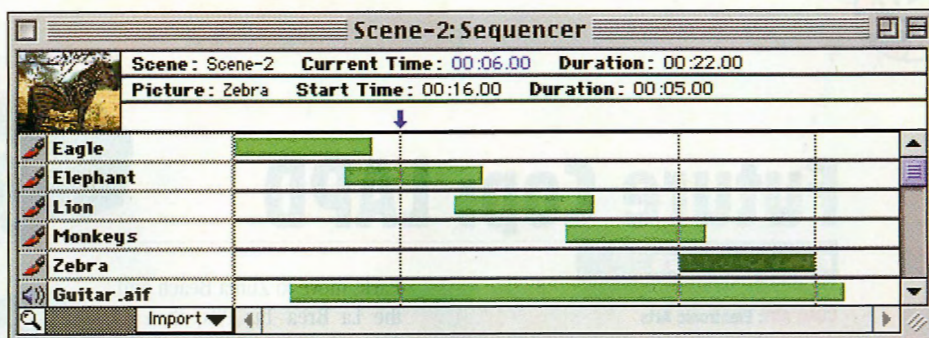
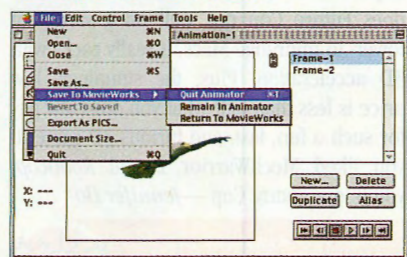
tions such as scaling, transitions, and paths. For quick access to the other components of MovieWorks, a Main Tools palette acts as a launch pad for each application.

Of course, you can't realize any multimedia project without graphics, so most users will start with the MovieWorks Paint application. You can access nearly every tool in Paint from the main palette, where you'll find the usual assortment of functions—selection tools, paintbrushes and airbrushes, an eraser, shape and line tools, color and pattern palettes, and a color picker. One especially nice touch is a floating help window. As you roll the cursor over, say, the line tool or the eraser, a succinct description appears in the help box, a boon for first-time MovieWorks users and multimedia novices. (Unfortunately, Paint is the only application in the suite that offers this truly useful feature.) Paint doesn't include Adobe Photoshop-style plug-ins, layers, or multiple undos, but it's robust enough to handle most painting chores for creating backgrounds, animation cels, and buttons.

One of the best features in all of MovieWorks' media-creation apps is the Save To MovieWorks command. With it you can save a paint, animation, sound, or video file directly into an open MovieWorks scene, without having to save the file first and then import it into a project. To minimize RAM overhead, the Save To MovieWorks command allows you to save a file and quit the application at the same time.

Animator, MovieWorks' easy-to-use app for cel animation, offers a basic set of drawing functions—including a pencil, shape tools, a selection tool, and a paint bucket—which are useful only for rudimentary pictures. You'll probably want to create your cel-based art in the Paint

THE SAVE TO MOVIEWORKS COMMAND IS ONE OF THE PACKAGE'S NICEST TOUCHES. It's available in every MovieWorks component, including the Animation program.



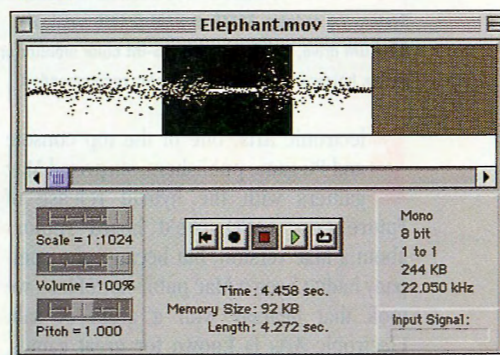
MOST OF MOVIEWORKS' ACTION TAKES PLACE IN THE SEQUENCER, a visual timeline that controls object duration, start time, stop time, and layering.

application first. Once you create the art and import it, Animator produces a series of frames, places a graphic in each frame, and sets the frame rate. The effect is similar to a flip book. When you finish the animation, you can save it as a stand-alone animation file or export it directly into a MovieWorks scene.

Aside from the Composer app, Sound—a 16-bit audio recorder and editor—is probably MovieWorks' strongest application. It can record audio from a Mac's built-in mini audio inputs or RCA audio inputs in CD-quality (44kHz) sound. You can edit the sound files using simple cut-and-paste commands. For more finessed audio tracks, Sound provides easy access to volume levels and built-in filters such as flange, echo, reverse, and fade. Like all MovieWorks applications, Sound is very easy to use and does its job well, but lacks higher-end features. Specifically, even though it records sound in stereo, only one audio track is visible. The Sound app also lacks mixing tools.

MovieWorks' Video application resembles a glamorized QuickTime MoviePlayer. It provides basic capture and editing functions but nothing more. The recording settings allow you to control the frame rates, codecs, number of colors, and source. Editing is as simple as highlighting video segments, then cutting and pasting. The Video app has no built-in filters, effects, or transitions, but you can get wipes and dissolves from Composer's transitions command.

MovieWorks has its quirks. Granted, most users in MovieWorks' target audience won't have two monitors hooked to their Macs, but previewing MovieWorks projects on two-monitor systems doesn't work properly: This function sends the second monitor's preview



THE SOUND APP IS ONE OF MOVIEWORKS' strongest components, with support for 16-bit stereo recording, editing, and manipulation.

askew and obscures most of the project's content. Also, except for the Paint application's outstanding help system, none of MovieWorks' components provide context-sensitive help or even balloon help, a curious omission in a product aimed at beginners.

Clearly, the engineers behind MovieWorks had one simple objective: to make a multimedia authoring suite that even the greenest novice could use. For the most part, they've succeeded. Every component in MovieWorks performs its job perfectly and does so without bells or whistles. Almost anyone who can turn on a Mac can figure out how to use each application in a matter of minutes.

Interactive Solutions describes MovieWorks as "the multimedia production tool for everyone." But the package might more accurately be called "the multimedia production tool for *anyone*," since it squarely targets the creative novice. —Rick Sanchez

GOOD NEWS: Easy to learn. Low RAM and processor requirements. A complete authoring environment.

BAD NEWS: Lacks contextual help.

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Future Cop: LAPD

FUN & GAMES

COMPANY: Electronic Arts

CONTACT: 800-245-4525, <http://www.futurecop.com>

PRICE: \$19.95 (SRP)

REQUIREMENTS: PowerPC 603e 180MHz or faster, System 7.5 or later, 32MB of RAM (24MB available), CD-ROM drive, QuickTime 3.0, 16-bit color monitor or better, hardware acceleration highly recommended

Electronic Arts, one of the top console and PC game publishers, surprised Mac gamers with the hybrid release of Future Cop: LAPD. We'd heard rumors about a Mac version, but because the company hadn't been a Mac publisher of late, we took that hearsay with a grain of salt. Electronic Arts is known for great games, and Future Cop: LAPD is no exception.

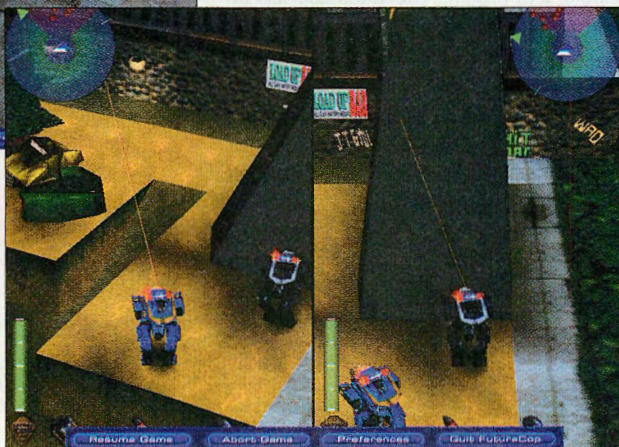
The goal of single-player Future Cop is quite simple: In the X-1 Alpha vehicle, you have to bust some crime-lord butt in a future Los Angeles. (Think *Robocop* set in the urban jungle.) You start in Griffith

TRANSFORMER—MORE THAN MEETS the eye. You can transform from Walker to Hovercraft, and vice versa.



PROTECT. SERVE. SURVIVE. As an LAPD officer, you show the crime lords who's the real boss.

PLAY COOPERATIVELY IN MULTI-PLAYER, split-screen mode for fun with your partner. Remember to back each other up—if your partner gets hurt, so do you.



Park, move to Zuma Beach and the La Brea Tar Pits, then fight crime at the LAX Spaceport and in Long Beach. In Crime War, your only opponent is the artificial intelligence, and depending on the difficulty level you select—easy, normal, or hard—you combat a series of enemy ships and bots, then take on the crime boss, who has immense firepower.

We tried playing Future Cop at each difficulty setting. While easy and normal modes are totally manageable, the hard setting is definitely challenging and offers the most adrenaline-pumping action for hardcore gamers. Thank goodness you have police-sanctioned firepower at your disposal. The X-1 Alpha comes loaded with three basic weapons—the Mini Gun, Hell-fire 2000, and Mortar—and you find additional ammo at reload stations on each level. Other cool weapons include the Flamethrower (these are almost *always* cool), Fusion Torpedo, Shockwave, and Plasma Fire. Your interface with the X-1 Alpha, the simple heads-up display, is effective because it doesn't distract you with a ton of details during gameplay. Speaking of gameplay, it's lock and load,



ROBOCOP, STEP ASIDE. The X-1 Alpha can take a licking and keep on ticking.

and the reliable autotargeting feature makes negotiating multiple targets a no-brainer.

Multiplayer Future Cop is also a blast to play. For example, you can cooperate with a friend on the same keyboard, in which case you see the level in split-screen format. This can be totally cool during flanking maneuvers with your partner. You can also play against a friend or against the AI Sky Captain in Precinct Assault, which takes place in one of four city districts. Your goal: Invade and secure the opponent's territory. Multiplayer Precinct Assault poses a much tougher challenge than Crime War, but it's the best way to improve your tactical skills.

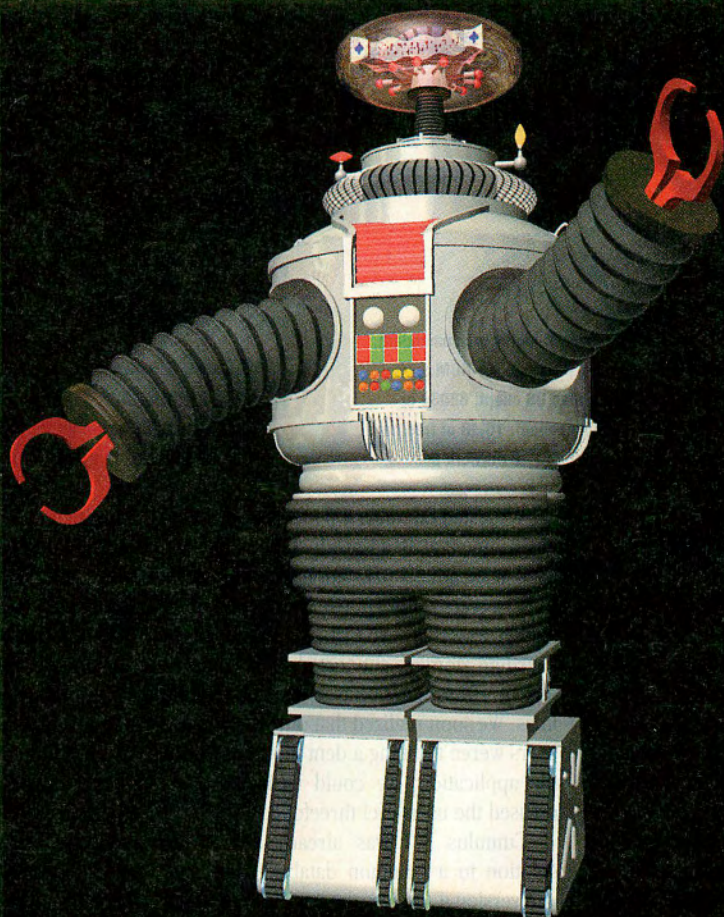
We found only two drawbacks in Future Cop: LAPD: It lacks modem-to-modem play (but who plays pickup modem games anyway?), and it doesn't have an in-game save option. Electronic Arts did a great job with the in-game 3D graphics, funny cut scenes, and sounds. Sometimes the music is repetitive, but your dispatcher's calm voice is the important thing to listen to here. Not only does Future Cop run well on a variety of lower- to midrange Macs, it really rocks with 3D acceleration. Plus, the stunningly low price is less than half what you'd usually pay for such a fun, fast, and furious 3D game. If you liked MechWarrior 2 and Robocop, you'll love Future Cop.—Jennifer Ho

GOOD NEWS: Awesome arcade action. Well-designed missions and levels. Runs well on even Rage II. Cooperative mode features split-screen play. Inexpensive.

BAD NEWS: No in-game save. No direct modem-to-modem play.



DANGER! DANGER!



Don't let your important data become Lost in Space™

When your Macintosh computer is not functioning properly, it is important that you have the right tool to find and correct the problem. And as any knowledgeable robot will tell you, one can never have too many tools when important data is at stake. TechTool Pro 2 checks and repairs more aspects of your Macintosh than any other utility available. Besides repairing and recovering damaged drives (including those with the new HFS+ format), you can also test all those other critical parts of your system that other utilities ignore like RAM, CPU, floppy drives, scanners, modems, Internet connections, CD-ROM drives and much, much more. TechTool Pro will even help your computer run faster by optimizing your disk drives.

But just because TechTool Pro is the most advanced Macintosh troubleshooting utility available doesn't mean that it's difficult to use. In fact, we've added an easy-to-use interface that makes checking and fixing your Macintosh a snap. For the advanced user, our expert mode allows you to control and configure TechTool Pro in almost any way you wish.

So if Macintosh troubles are making you feel like a bubble-headed booby, check out TechTool Pro. After all, you have the most powerful computer in the galaxy. Shouldn't you be using the most powerful utility?

Visit us at MacWorld San Francisco January 5-8, 1999 at Booth #3751.

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Cumulus Network 4.0

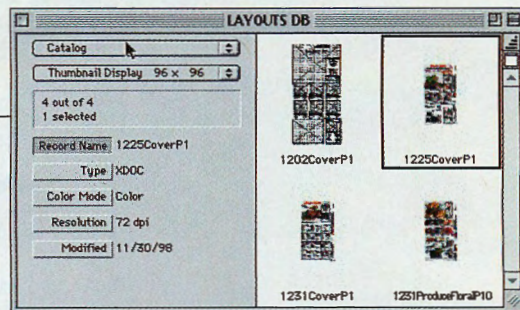
PRODUCTIVITY

COMPANY: Canto Software

CONTACT: 415-905-0300, <http://www.canto.com>

PRICE: \$2,495 (SRP)

REQUIREMENTS: Mac OS server: 68030 or faster (PowerPC highly recommended), System 7.1 or later, 7MB of RAM, 10MB of free hard disk space, CD-ROM drive, OpenTransport 1.1.2 or later, TCP/IP network access; Mac OS client: 68030 or faster, System 7.1 or later, 2.5MB of RAM (6MB recommended), 10MB of free hard disk space, CD-ROM drive, OpenTransport 1.1.2 or later, TCP/IP network access

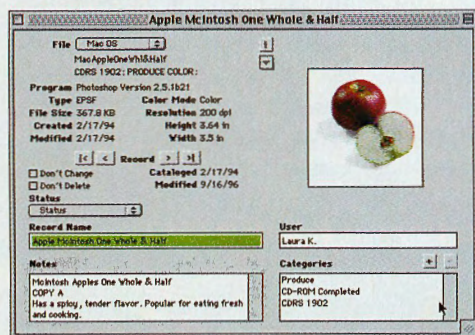


USE CUMULUS, A STELLAR MEDIA-ASSET MANAGEMENT APPLICATION, not only for digital images, but also for retrieving all finished templates—in this case, QuarkXPress layouts.

You may think you're organized, but as you produce more and more digital graphics, do you often find yourself wasting time re-creating images simply because it takes too long to locate them? If you answered yes, then consider Canto Software's Cumulus Network Media Management System. Whether you're a publisher, a printer, a designer, or an agency, asset management may have a place in your workflow. We tested Canto's Cumulus 4.0 for network servers on a 300MHz Power Mac G3 and found it a god-send for managing large image databases.

Canto recently upgraded its Mac version of Cumulus Network to 4.0. If you've used version 3.0 (see *Reviews*, Jul/97, p68), you'll be impressed with 4.0's features, especially its new cross-platform capability (which works on Unix, Windows NT, and Mac servers) and its ability to mix client workstations.

THE INFO WINDOW HAS ALL THE INFORMATION you need for every cataloged file. Note the bold print. You can search by file name, image name, color mode, user, and so on.



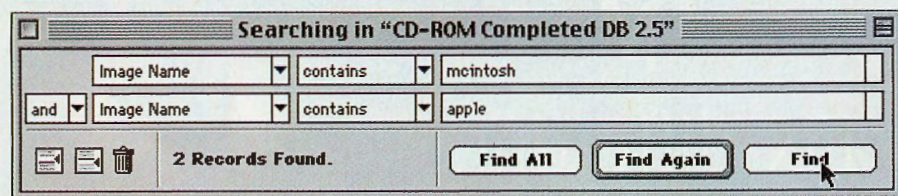
We tested Cumulus 4.0 in a live workflow environment at an ad production facility. We used it on Mac workstations supported by Unix servers with 100GB RAID's of online storage as well as two CDL-100 Jukeboxes of near-line storage, connected by a complex mix of 10BaseT, 100BaseT, and fiber optic lines. We soon realized that our 30 database users weren't putting a dent in the power of the application; we could easily have increased the user level threefold.

Cumulus 3.0 was already a fantastic solution to a common database dilemma, and version 4.0 raises the bar another notch by adding TCP/IP accessibility. Through AppleTalk, Cumulus 3.0 had no speed problems, but TCP/IP blows AppleTalk away. Cumulus 4.0 took just seconds to search for anything in our database of 75,000 images and documents.

Cumulus 4.0 also allows you to access the server remotely from any client workstation, through either a WAN, an intranet, or the Internet. If you want to post images to the Web, the robust Cumulus CGI is ready to do the scripting. Customizing the CGI requires some technical savoir faire, but once it's in place, it's most certainly worth the effort.

Cross-platform, royalty-free browsing is another feature new to version 4.0. We burned CDs of images and viewed them at remote

CUMULUS 4.0'S POWERFUL SEARCHING TOOL CAN pinpoint your find. It can search through all files for specific items, but you can also tell it what not to show by inserting conditions.



sites that didn't have Cumulus installed. This Acrobat-like ability enables companies to distribute images on a project-by-project basis and let their customers view images without the application—a major benefit for photography agencies.

Cumulus 4.0 supports more than 100 file formats, including PhotoCD and QuickTime. Photographers at our ad production facility downloaded Photoshop images from their Hasselblad cameras using Scitex Leaf software, and in seconds Cumulus imported each file's information and posted its representative thumbnail.

One notable Cumulus feature that *isn't* new to version 4.0 is its powerful Find feature. It can search for any file by name, image, folder, user, volume, file type, color mode, resolution, file size, category, and even the notes it contains. Our production facility embedded an AppleScript to assign categories such as ad dates and brief descriptions on the fly. This easy-to-use filing system makes searches quicker and easier.

Cumulus Network 4.0 may sound too good to be true, but it really is the pro tool to use for media-asset management. We found only one small problem: When you transfer a batch of old images to a CD, Cumulus 4.0 doesn't calculate the total size of the batch, so you can't tell ahead of time whether it will fit on the 650MB disc. But that's a minor shortcoming in such an indispensable application. If you compare databases for heavy-duty professional work, look no further: Cumulus 4.0 is your ticket. —*Sam Jimenez*

GOOD NEWS: TCP/IP access. Cross-platform management. Speedy searches via the Find feature.

BAD NEWS: Doesn't calculate the cumulative size of a selected batch of files.



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reviews

reviews

Adobe PageMill 3.0

DESIGN & GRAPHICS

COMPANY: Adobe Systems

CONTACT: 800-411-8657 or 408-536-6000, <http://www.adobe.com>

PRICE: \$99 (SRP), \$49 upgrade

REQUIREMENTS: Power Mac, System 7.5.5 or later, 8MB of available RAM, 20MB of free hard disk space, 256-color display or greater, CD-ROM drive



FIND A DEMO
of Adobe
PageMill 3.0
on The Disc.

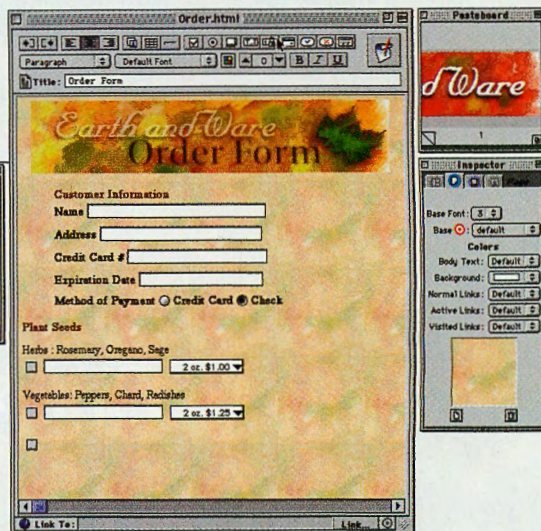
Adobe PageMill 3.0 gives consumers a lot of bang for the buck, and for Web page and site development it's about as good a bundle as you can get for the price. Creating simple Web sites really is a snap with this package, but there is more—and less—to PageMill 3.0 than meets the eye. For a number of reasons, even on its third try Adobe has not been able to translate the ease of use of its other consumer-oriented page-layout and graphics products to this Web authoring tool.

If you've used PageMill 2.0 or competing

products such as FileMaker HomePage, Microsoft FrontPage, or Symantec VisualPage, the basic structure of PageMill 3.0 will look familiar. Its two main components are the page-layout editor and the site-management tool (which was sold separately in the past as SiteMill), and it's easy to flip back and forth between the two modules—or, if you have enough screen space, to view both components simultaneously.

Adobe's page editor is adequate, with capabilities that have been standard for a couple of years. The best feature is the client-side image map editor, which is both fast and easy to use. You can add and edit text, graphics, and forms, and you can drag and drop text and images from common Mac applications such as Microsoft Word and Excel, Corel WordPerfect, and Adobe Photoshop and Illustrator. A built-in pasteboard provides easy access to frequently used images. You can easily add, edit, and remove links from both the page editor and the site-management tool. The menu system is logical, but the task bar icons are small and often cryptic. PageMill 3.0 does live up to its billing as a WYSIWYG editor: What you see on the page is pretty close to what you'll see in your browser.

PageMill 3.0 has some significant flaws, however. The page editor is very slow; it couldn't keep up with our fast typing. Editing tables, rows, and



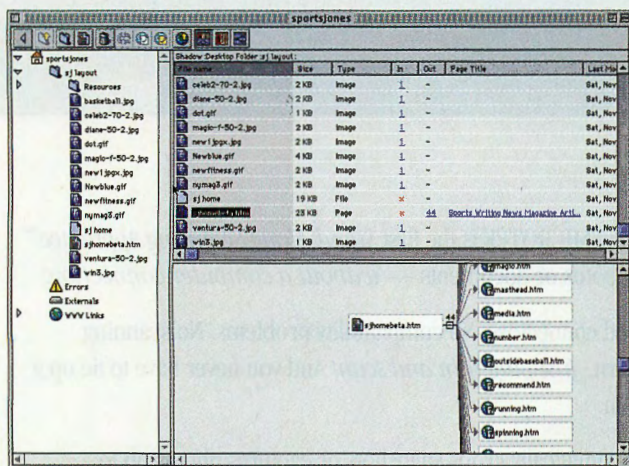
PAGEMILL 3.0 PROVIDES ACCESS to standard Web page editing functions through both menus and palettes.

cells is awkward and confusing. For example, to select a cell, you must place your cursor in the cell and then use the Command-9 key combination. You can also select the cell by choosing Edit, Table, and Select More from the drop-down menus. But why Command-9? Or why not Edit, Table, and Select Cell? In comparison, HomePage's table editor is easier to use and performs the same functions.

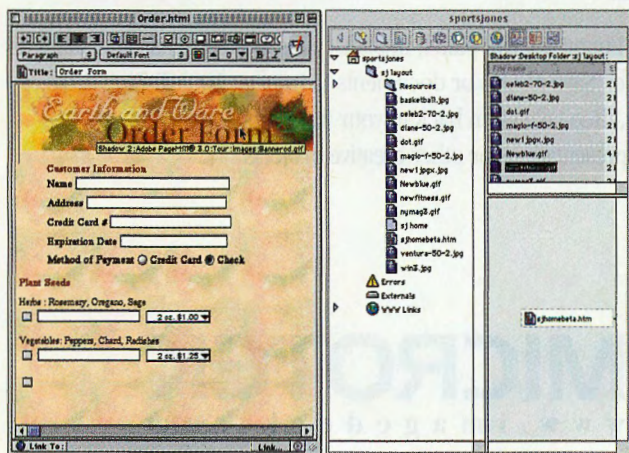
Also, PageMill 3.0's documentation is poor. The package comes without a paper manual, and the slim tutorial book is confusing, with instructions for both Windows and Mac versions merged. Plan on printing out the useful online help files.

On the plus side, PageMill 3.0 offers excellent tools for creating frames and frame sets, which can be a complex and confusing task. PageMill's site-management tool is effective, too: When you make changes to one element—for example, changing a file name—PageMill 3.0 automatically updates other affected pages. In our tests it performed these updates flawlessly and fairly quickly. The site-overview interface is easy to understand and allows you to view and work with files in list view, detail view, and link view panes.

If you want to create a simple or moderately complex Web site, PageMill 3.0 is a very good product, and its price is hard to beat. Professional developers, however, should look elsewhere.—Jeff Merron



THE SITE-MANAGEMENT INTERFACE is easy to understand and lets you view and work with files in list view, detail view, and link view panes.



GOOD NEWS: Easy WYSIWYG page layout. Integrated source-code editor. Fast, efficient site-wide spelling check and link verification. Photoshop LE 4.0 included. **BAD NEWS:** Slow. Clunky table editing. Sparse printed documentation.



Two Important Reasons To Consider Mitsubishi's 21" (19.7" DVI*) Displays.

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21" Models	CRT Pitch	Max. Resolution	Auto-Scan Range
Diamond Plus 100e	0.28 mm	1600 x 1200/85 Hz NI	H: 30-108 kHz V: 50-152 Hz
Diamond Pro 91TXM	0.28 mm	1600 x 1200/75 Hz NI	H: 30-95 kHz V: 50-152 Hz
Diamond Pro 1010e	0.26 mm	1800 x 1440/76 Hz NI	H: 30-115 kHz V: 50-152 Hz
Diamond Pro 1000	0.28 mm	1800 x 1440/76 Hz NI	H: 30-115 kHz V: 50-152 Hz

* DVI: Diagonal Viewable Image. Resolution refers to maximum addressable resolution H x V.

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Vpower PF G3/240

HARDWARE

COMPANY: Vimage

CONTACT: 310-225-3979, <http://www.vimagestore.com>

PRICE: \$499 (SRP)

REQUIREMENTS: Power Mac and Performa 5400 and 6400 series, Power Mac 5500 and 6500 series, Performa 6360, Akia MicroBook Power 603e/240, Umax Apus 2000 and 3000, or SuperMac C500 series; System 7.5.3, 7.6, 7.6.1, 8.0, 8.1 (8.1 strongly recommended)

If we had a nickel for every CPU upgrade on the market today, we could retire to a posh village in Tuscany and sip Chianti all day. The plethora of CPU upgrades for the Mac has made us blasé, but then Vimage came out of the blue with upgrade solutions for Macs that were essentially nonupgradable—you know, consumer models such as the Power Mac 4400. Vimage has done it again with the Vpower PF G3/240, a G3 upgrade for the “nonupgradable” Performa and Power Mac 5400 and 6400 series, Power Mac 5500 and 6500 series, and Performa 6360.

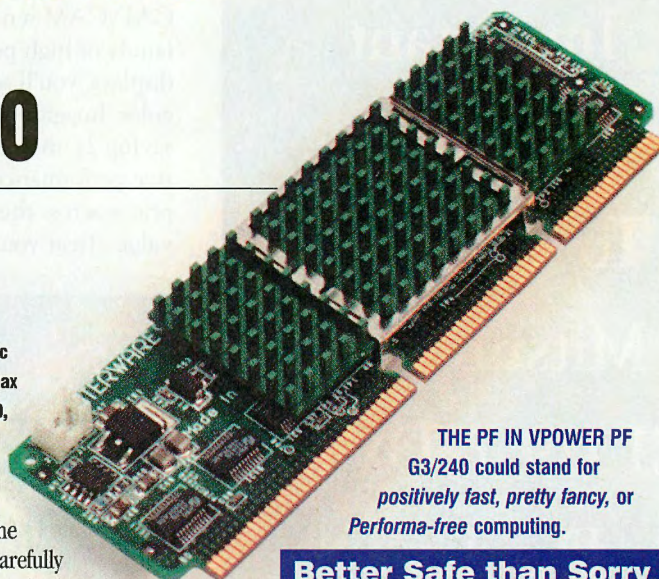
If your Mac model is listed in the above requirements, you can now join the G3 club. The Vpower PF G3/240 features a 240MHz PowerPC 750, aka the G3, and a 512K level 2 backside cache running at 120MHz. In the 5500 and 6500 series, it runs at 225MHz because of the 50MHz bus. (The other models have a 40MHz bus speed.) This upgrade plugs into the L2 cache slot.

Installation is a breeze. You install a control panel and an extension from the included

floppy. Then you shut down the computer and carefully slide out the motherboard tray. If there's already an L2 cache module in the cache slot, you remove it and plop in the Vpower PF G3/240. Last, you put everything back into place and restart the computer. The entire process takes 7 to 10 minutes and is very simple. However, if you're uncomfortable with hands-on work, you should ask an authorized technician to install the Vpower PF G3/240.

We tested the Vpower PF G3/240 on a good but aging Performa 6400/200 and a 6500/225. These shipped with a PowerPC 603e. Before the upgrade, our test models were still good computers for word processing, Web browsing, some graphics work, and even a few games, but with a G3 they can do pretty much anything that professionals do with beefy 604s and G3s, plus you get to sneak in some fun time to play Unreal and Myth II. And one of the best things about the Vpower PF G3/240 is that it doesn't take up any PCI slots, so you can keep or add two PCI cards. Want to add a dedicated gaming card and a video card? No problem.

After the upgrade, the Performa's original performance pales in comparison. In our tests using Norton Utilities 4.0, the newly G3-blessed Performa 6400 achieved a 95 percent increase in overall system performance. Its CPU score increased by 92 percent, its FPU performance became 49 percent faster, and its video output was 128 percent better! Awesome, indeed. Disk operations didn't increase significantly, but that's to be expected, as CPU upgrades don't overhaul



THE PF IN VPOWER PF G3/240 could stand for *positively fast, pretty fancy, or Performa-free computing.*

Photo by Adam Vanderhoof

Better Safe than Sorry

Before you install the Vpower PF G3/240 or any CPU upgrade, take a few precautions:

Grubby Paws? Make sure your hands are immaculate and completely dry.

Conducting like a rod? Discharge any static electricity by touching the power supply's metal frame.

Is that a strap-on? Use the included safety wrist strap for added protection.

Gold is for looking. Don't touch the gold connectors on the Vpower PF G3/240.

Loose screws? Keep track of all the screws.

Basketball? When you're installing, apply constant, steady pressure—no slam-dunking allowed.

disk speeds.

The Vpower PF G3/240 turns your aging Performa or Power Mac into a modern Mac relevant for both basic and professional applications. Of course, you could buy a new Power Mac G3 for an additional \$650. For some owners, though, upgrading to a G3 for \$499 is more affordable. The other argument against upgrading is the \$1,299 iMac. However, the iMac's native USB would require you to acquire some new peripherals or at least an ADB-to-USB adapter, so that package would cost at least \$620 more than the upgrade alone. Each owner will have to decide what's appropriate, but the Vpower PF G3/240 is an awesome upgrade. —Jennifer Ho

Norton Utilities 4.0 System Info Benchmarks

Test system: Performa 6400/200 with 16MB of RAM, System 8.1, virtual memory on, 1MB of VRAM, disk cache set to 256K in all tests

	Original 6400/200	9600/200	6400/Vpower	iMac
Overall	212	408	414	581
CPU	249	460	478	632
Video	113	353	258	421
Disc	246	172	294	484
FPU	365	495	543	543

(the higher the number, the better the performance)

GOOD NEWS: Easy to install. Instant speed bump. Super price-to-performance ratio. Doesn't take up limited PCI slots. Rejuvenates previously nonupgradable Macs. **BAD NEWS:** Doesn't increase speed of fixed components such as the bus.



Vimage® CORPORATION

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NEW for the G3 Mac.



G3/Z400
\$1499

400MHz ZIF upgrade

**Apple 54, 55, 64, 65
20th Anniversary
Super Mac C500**

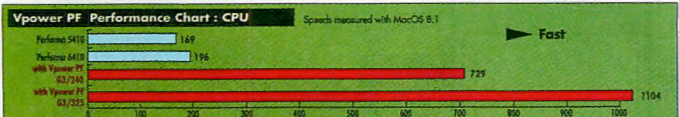
A Worldwide Exclusive

Owners of the 54xx, 55xx, 64xx, 65xx and 20th Anniversary Macs are no longer left out in the cold! Transform your computer into a G3 machine simply by plugging the Vpower PF G3/240 card into its Level 2 cache slot. Your computer is a big investment. Why let it depreciate when Vpower can keep you at the forefront of Macintosh CPU technology?



320/325 MHz
\$1299

PF 240MHz
\$499

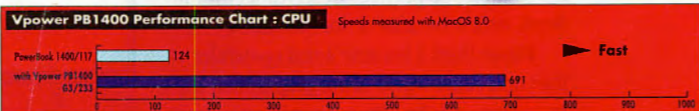


PowerBook 1400

Make your PowerBook work for you with the Vpower PB 1400 G3/233. Scorching speed and extra-low power consumption combine to ensure that you'll be at your most productive, whether at home or on the road.



PB1400 233MHz
\$499



Power Mac 4400 StarMax 3000 & 4000

World's First PM 4400, StarMax 3000/4000 Upgrade

The word is out: Vimage is the industry leader when it comes to producing innovative upgrade solutions for "dead-end" machines. Simple, plug-and-play installation allows you to enjoy all the benefits of a G3 machine in just minutes. There's never been a better time to take your computer to the next level of performance.



300MHz
\$899

PM4400 240MHz
\$499



PCI Power Mac

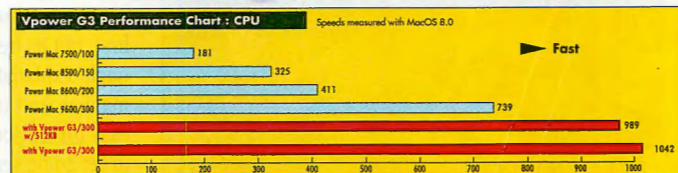
Bring your Power Macintosh into the G3 generation with a Vpower G3 upgrade card, and enjoy the best price-to-performance ratio available on the market!



300MHz/1MB
\$599

366MHz
\$1199

300MHz/512
\$499



Product	Compatible Machine	CPU	Cache	Price
Vpower G3/300	Power Mac 7300,7350,7500,7600,8500,8550,8600,9500,9600,9650 UMAX S900,S910	G3/300MHz	1MB/150MHz	\$ 798
Vpower G3/233	Power Mac 7300,7350,7500,7600,8500,8550,8600,9500 UMAX S900,S910	G3/233MHz	512KB/117MHz	\$ 389
Vpower PB 1400 G3/233	Power Book 1400	G3/233MHz	512KB/117MHz	\$ 499
Vpower PM 4400 G3/240	Power Mac 4400 Motorola Star Max 3000, 4000	G3/240MHz	512KB/120MHz	\$ 499
Vpower PM 4400 G3/300	Power Mac 4400 Motorola Star Max 3000, 4000	G3/300MHz	1MB/150MHz	\$ 899
Vpower PF G3/240	Power Macintosh/Performa 54xx, 55xx, 64xx, 65xx, 20th Anniversary Super Mac C500	G3/240MHz	512KB/120MHz	\$ 499

*The PowerPC name and the PowerPC logo are trademarks of International Business Machines Corporation, used under license therefrom.

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Corel Photo-Paint 8

DESIGN & GRAPHICS

COMPANY: Corel

CONTACT: 800-772-6735, <http://www.corel.com>

PRICE: \$495 (SRP), \$129 upgrade

REQUIREMENTS: Power Mac, System 7.6.1 or later, 32MB of RAM with virtual memory on, CD-ROM drive, 80MB of free hard disk space for full installation

Photo-Paint 8, also part of the CorelDraw 8 suite, is now available separately. Although we touched on Photo-Paint 8 in our review of CorelDraw 8 (Nov/98, p54), the stand-alone package deserves its own in-depth review because it does so much.

Photo-Paint 8 became a real contender in the competitive world of imaging-editing apps by using Adobe Photoshop's very own strengths to its advantage and trumping them with added versatility. For example, Photo-Paint 8 lets you save your work (layers and all) in Photoshop-native format, and it can use all Photoshop plug-ins. It also includes most of the functions of ImageReady and even Painter. Thus, Photo-Paint 8 enables those who are new to it to work in a familiar mode,

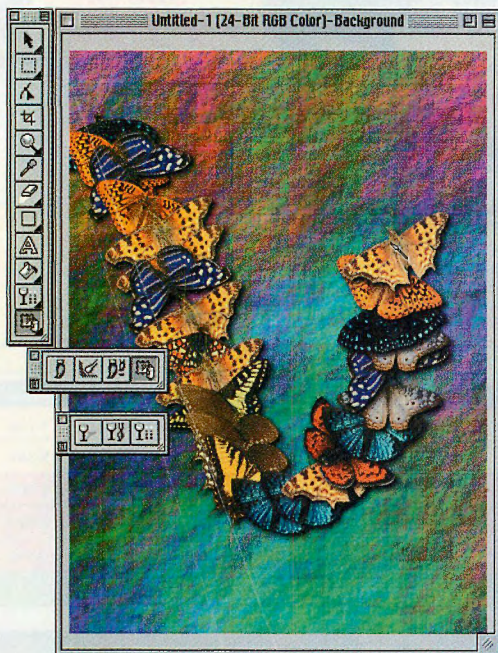
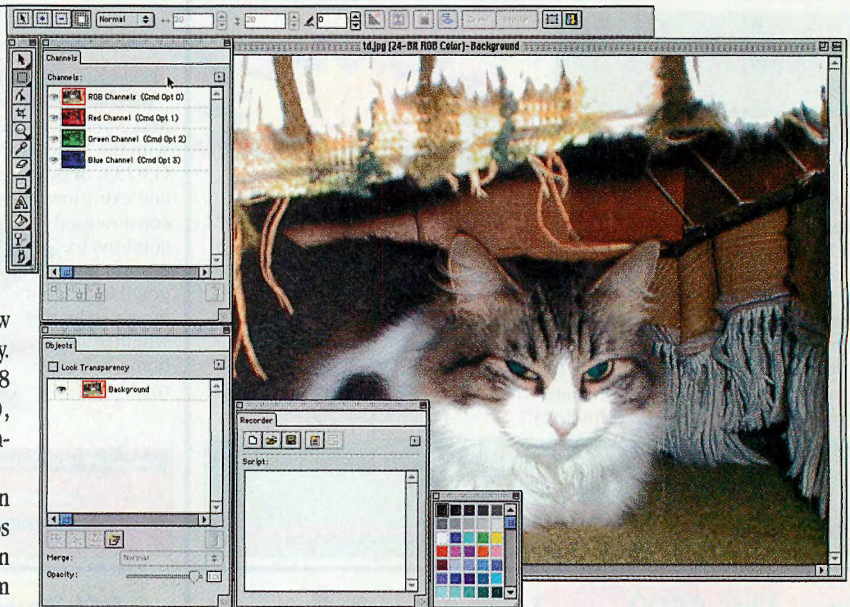


PHOTO-PAINT 8'S IMAGE SPRAYER LETS YOU PAINT entire objects along your chosen path. Here we chose butterflies in a random pattern on top of a colorful background.



COREL PHOTO-PAINT 8'S INTERFACE IS ODDLY FAMILIAR and unfamiliar at the same time. But its customization options beat Photoshop's any day.

making it a better value than buying and maintaining several separate applications.

Once you've loaded the program onto your hard drive, along with its full set of support, tutorial, and sample files (a hefty 80MB total), you're set not only to effectuate elegant bitmap editing, but also to explore fully the realms of digital illustration, unconstrained by anything but your Mac's physical RAM and hard drive capacity.

Photo-Paint 8 looks a little unfamiliar at first, but its helpful pop-up identifiers, thorough explanations of each feature in the manual, and included how-to book make it easy for novices and Photoshop users alike to get going very quickly. The program offers every feature available in Photoshop 4.x, then extends its feature set with customizable workspaces, operations undo, and the Painter-like concepts of nibs and hoses, as well as Internet features and solid but basic animation and movie-editing abilities. In sum, Photo-Paint 8 contains everything a bitmap artist might want in one tidy package. The only area that Photoshop 5.x users might find lacking is Photo-Paint 8's type-handling controls; they fall short of Photoshop's, which Adobe recently enhanced. The existing controls, however, are more than adequate for almost every kind of work, and

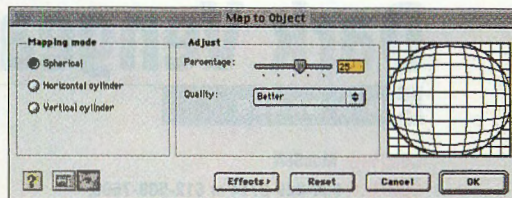
few users will notice serious limitations.

For Web artists, Photo-Paint 8 is a god-send. Not only does it import and export every conceivable kind of Mac and PC graphics format (say bye-bye to separate conversion applications), but its transparency options, browser-specific optimization palettes, and animation capabilities make it superior to Photoshop or ImageReady for JPEG and GIF file creation. Photo-Paint 8 also brings in vector illustrations like those created in Illustrator and FreeHand (and CorelDraw, of course) with equal ease and preserves color tables perfectly, unlike some programs. Corel has added extensive print and Web color support, and for the first time we can unequivocally say that the company has incorporated true world-class print and Web color management into its product.

One of Photo-Paint 8's best features is its ability to create customizable workspaces, which enable you not only to set up frequently used commands where you would find them most useful, but also to rearrange menus and palettes to boost productivity. The Corel property bar (think of it as an expanded onscreen contextual menu) is the only addition you'll have to get used to, but you can add, remove, or reorganize all the commands on it as well.

Creating Escher Spheres

If you've ever wanted to simulate the distortion caused by a drop of water, you can use Photo-Paint 8's Map To Object function.



1 Photo-Paint 8 comes with features you won't find or can't easily duplicate in Photoshop, such as the Map To Object and Lens Flare filters. Here, we're going to create a hovering glass sphere.

2 Using the Circle Mask tool, we create the sphere.

3 Now we bulge the selection into a spherical shape. Notice that we can add other effects to this one using the Effects button.



4 Users of Painter will recognize the iconic brush options. We'll go for an airbrush with a wide cover.



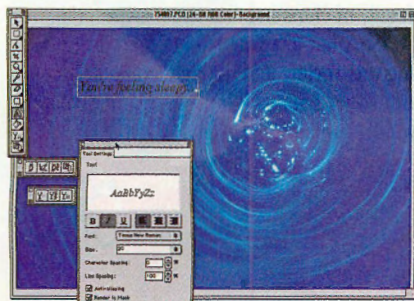
5 We add a bit of white airbrushing to the top and sides and a little black airbrushing to the bottom to re-create the opacity of the glass.



6 Finally, we use Lens Flare to add a little sun-speckled distortion, and our illusion is complete!

The Painter-like functions of Photo-Paint 8 include the familiar Image Sprayer, full support for drawing tablets, and nib changing. It also offers Brush Symmetry, which allows both Radial and Mirror symmetrical painting, and Orbits, a feature that enables you to set a hub point or series of points to paint around.

Photo-Paint 8 takes advantage of native Mac technologies, offering features that even Corel's longtime PC user base never enjoyed. For instance, the program has drag-and-drop support, ColorSync compliance (including the underused but emerging Hexachrome color model support), QuickTime 3 features (including QTVR stitching), AppleGuide Help, and—most important for Mac OS 8.5 users—full AppleScript support. By using AppleScript to record and play back a series of actions (as with Photoshop's Actions palette), you can undo a full or partial series.



THE TEXT TOOL FEATURES a number of settings that allow you to adjust the look of your text.

You might think that offering a program that can handle even the most demanding Web, print, and video files with the same finesse as the competition would be enough for Corel. Not so. The company has sweetened the honey to attract Photoshop devotees, offering them a considerable add-on package of carefully chosen goodies that function together harmoniously. As it did with the full CorelDraw suite, Corel has included the Font Reserve font management software, the Cumulus Desktop portfolio manager, the Digimarc watermarking tool, and the Photo/Graphic Edges and Paint Alchemy plug-ins. In addition, Corel chose 1,200 of its best EPS clip art images (as opposed to the larger but poorer selection that PC users receive); 100 high-quality stock photos; a selection of animated GIFs, Web backgrounds, floating objects, and textures; and 1,600 TrueType and Type 1 fonts. The stand-alone Photo-Paint 8 also comes with the hefty manual, a commercial printing guide, and even a bonus book, *Corel Photo-Paint 8: The Official Guide*.

Given all that material, Photo-Paint 8 requires a large RAM allotment. Specifically, it needs a minimum of 32MB of RAM with virtual memory enabled before it will install—and any Power Mac with less than 40MB of physical RAM will feel the pain of churning operations. Also, Photo-Paint 8 can run only on a Power Mac; however, in our tests with the program on a 601, we found ourselves waiting quite a bit longer

than with a 603e or 604. Of course, Photo-Paint 8 performs spectacularly on a G3.

With its full support for every type of professional output, including even the relatively new PostScript level 3 and Web and graphics formats, Photo-Paint 8 is an ideal choice for artists who want maximum versatility in one package. It has enough extra features and goodies to persuade even those who already own Photoshop to take advantage of the \$129 upgrade price. Corel has worked hard to bring only the best product over to the Mac, realizing that if it wanted to make any sort of dent in Photoshop's fortress, it would have to present superior value and quality. Apart from a few Windows-like icons and first-run hiccups, Photo-Paint 8 sports a Mac interface on top of a powerful application that, for now at least, has one up on most aspects of Photoshop. It will be interesting to see if this development inspires Adobe to do something it hasn't done in a while: Compete.—Charles Martin

GOOD NEWS: Has every tool a new-media artist could want. Handles GIF animation and basic movie editing. Uses Photoshop-compatible plug-ins. Customizable workspace. Contextual property bars. Strong Apple technology support for both print and the Web. How-to book and lots of software freebies included. **BAD NEWS:** RAM hog. Slow to open. Really needs a fast 603e or better. Installation procedures are not well documented.





Dark Vengeance

FUN & GAMES

COMPANY: MacSoft

CONTACT: 800-229-2714 or 612-509-7600,

<http://www.dark-vengeance.com>

PRICE: \$49.99 (SRP)

REQUIREMENTS: 150MHz 603e, 120MHz 604 or faster, System 7.6.1 or later, 24MB of RAM, 50MB of free hard disk space (300MB recommended), 4X CD-ROM drive, hardware acceleration recommended

The long-awaited third-person Dark Vengeance is a hybrid of action, adventure, and role-playing at its finest. With its three character classes, over-the-shoulder action, and 3D environment, you could call Dark Vengeance a blend of the dungeon crawler Diablo and the action adventure Tomb Raider. But this game is much more: It has an engrossing story. You can play one of three characters—Jetrel the Warlock, Nanoc the Gladiator, and Kite the Trickster—in the fight against the evil Dark Elves and other

NANOC SMASH GOOD with lightning—he kill bad, bad ghost.



powerful forces, which are taking over the land of Amagar from the bowels up and plan to end all humankind. You can also play all three characters to enjoy three different single-player story lines.

As with any third-person game, controlling the character is more difficult than in a first-person shooter because the camera, which follows the character, tends to swing imprecisely, making navigation a more complicated task. Dark Vengeance is no exception: It's not easy to navigate precisely in narrow tunnels and to negotiate sharp turns. Adding to that difficulty is the system of "chording," which means using key combinations to perform movements. To sidestep, for example, you use the attack key (you program it yourself) and the keys for turning left and right. Using key combinations is bothersome, especially for those of us who sidestep left or right in other games with just one keystroke. We recommend that you either program a gamepad to handle chording or deprogram the feature altogether and set up your usual key commands.

Once you master all the controls, you'll be swinging the battle-ax to drive those Dark Elves back into their labyrinthine lairs. Gameplay is super smooth, with the right mix of fighting, exploring, and puzzle solving. After trying Jetrel the Warlock and Kite the Trickster, we chose mainly to play Nanoc—Conan spelled backward—for this review because the robust gladiator excels in hand-to-hand combat. Nanoc isn't as bright as the oth-

ers, but he smashes and pounds much better! Magicians are weak at hand-to-hand combat, so Jetrel is pretty puny at first, but when he gets some magic weapons later in the game, he becomes a force to be reckoned with.

Dark Vengeance's graphics are beautiful and its creatures are fantastical. Some of the truly cool graphics include stained-glass windows that break into pieces to form sword-wielding knights; lightning from the lightning stick; and evil cherubim that turn into heavenly angels when you "liberate" them. And the surprises don't end there. Scripted cut scenes punctuate each level, keeping you involved with the unfolding plot. Dark Vengeance also gets superior marks for its mood music, which befits the sinister ambience, and for its awesome weapons.

Dark Vengeance is a blast, and after playing it we don't want to play Diablo again—Dark Vengeance's real-time 3D environment is far more engrossing. Also, the game's hardware-accelerated visuals and dynamic lighting are stunning, so you don't want to miss out. For spectacular results, we recommend playing on a G3 or at least a 604e. Dark Vengeance's one minor shortcoming is its lack of Glide support, but the Voodoo family of chips handles RAVE games, too.

So what are you waiting for? Stop reading this review and go kick some elf butt—or your friends' butts—in deathmatch mode.—Jennifer Ho

GOOD NEWS: Compelling fantasy-based story with well-developed characters and villains. Awesome graphics and suggestive music.

Formidable weapons. Multiplayer mode rocks.

BAD NEWS: No Glide version. Chording makes for a higher learning curve.



IF YOU PREFER A GOOD HAND-TO-HAND SLUGFEST, play Nanoc first—he's got the stamina for swordplay. If you want to keep your enemies at a distance, Jetrel casts spells where it hurts.

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reviews

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Autoscore 2.0.2 Professional

AUDIO

COMPANY: Wildcat Canyon Software

CONTACT: 510-527-5155, <http://www.wildcat.com>

PRICE: \$249 (SRP)

REQUIREMENTS: 68040 or PowerPC, System 7.0 or later, 8MB of RAM, 4MB of free hard disk space, sound-input device

For years, folks with musical ideas but no MIDI instrument were left out of the world of convenient MIDI composition and arrangement. Wildcat Canyon Software closes the gap with Autoscore 2.0.2 Professional, its ingenious software package that allows anyone who can sing or play an instrument to create songs and arrangements, play them back using QuickTime Musical Instruments or MIDI Instruments, save them as standard MIDI files, and print notated scores.

Autoscore 2.0.2 comes on two floppy disks, and the package includes a microphone and a stand. Installation is easy. If at first you don't get adequate recording levels with the microphone, try Apple's PlainTalk microphone (you'll need to adjust levels in the Configure part of the Test Mic window). One word of caution: Autoscore doesn't work well with Open Music System, so disable that extension before working with the program.

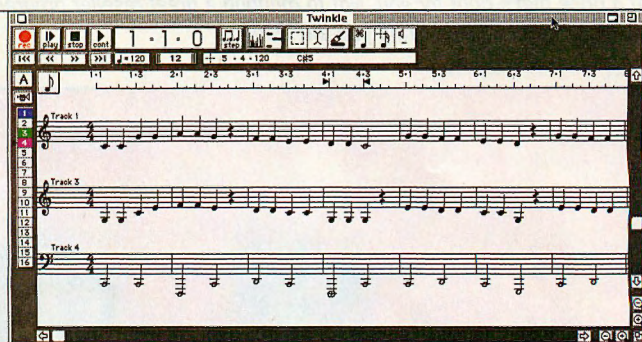
Autoscore 2.0.2 records your voice or instrument as a WAV file and converts this information into MIDI data almost

instantaneously. It's astounding to sing into the microphone and immediately see

your music notated on the monitor. The package also includes Opcode's Musicshop 1.02 sequencer, so you can edit notes, add tracks, create arrangements, and mix your musical opus.

Both Autoscore's and Musicshop's manuals get you started, but they aren't detailed enough to tell you how to use these programs' deeper features. Fortunately, you'll be able to record with the microphone and start editing your music without much customization. As with any instrument- or voice-recognition software, becoming proficient takes time, but Autoscore 2.0.2 offers sophisticated customizations to help you input your music.

For voice and other instruments that vary in pitch, Autoscore 2.0.2's pitch-tracking features are invaluable. You can also hear reference tones from the Autoscore menu to keep you in tune. Tru-Track Mode limits the notes in the sequence to a particular key.



SING MOZART'S "TWINKLE LITTLE STAR," and Autoscore 2.0.2 scores it for you. It even scores harmonies and bass tracks.

Before each note, Tru-Track sends a single pitch-bend message. What you hear is the exact pitch you recorded, even if it's sharp or flat. The Pitch Bend Tracking Mode is really exciting because it continuously tracks your pitch—it doesn't generate new note messages when you slide from one note to another. This effect can be bizarre or ultra-realistic, depending on the instrument you choose to play the part.

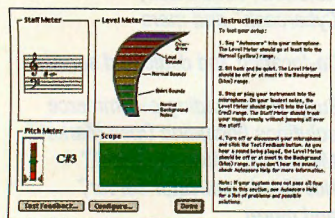
Autoscore 2.0.2 Professional impresses with its ease of use and accurate sound analyzer. It brings new meaning to the term *moderato cantabile*.—Judy Munsen

GOOD NEWS: Easily converts sound into written music. Impressive instrument-customization and pitch options. Sequencer and microphone included. **BAD NEWS:** Manuals aren't detailed enough. Internal click isn't reliable.

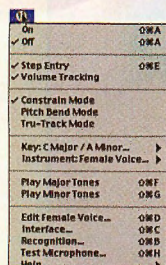


No Instrument? No Problem

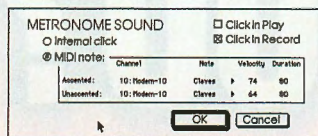
You don't need an instrument to make music, nor do you need to know a lot about music to produce a musical score.



1 Test your microphone. The level shows how much signal is present when you're playing and when there's silence. You can also see what notes you're singing or playing.



2 Select the Autoscore menu. Choose the appropriate pitch mode, key, and input instrument (we used the Female Voice setting).



3 Set Metronome Sound to a MIDI note. Using Channel 10 lets you access the drum sounds. Click and hold the triangle, then listen to the sounds as you move the mouse over them.



4 Set the tempo, click Record, and sing. Press Return to stop recording. If the rhythm isn't right, select the whole track, then click and hold the note-and-clover button to choose the desired quantize value. Select Quantize Selection from the Do menu.

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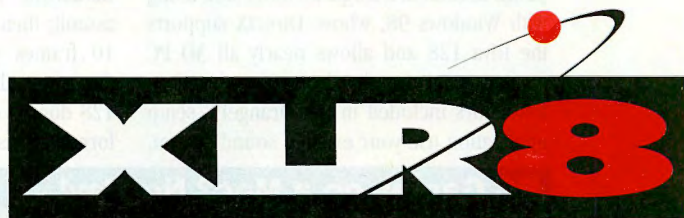
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PCfx

HARDWARE

COMPANY: Orange Micro

CONTACT: 714-779-2772, <http://www.orangemicro.com>

PRICE: \$649 (SRP)

REQUIREMENTS: Power Mac, System 8.1, one free 12-inch PCI slot, 300MB of free hard disk space

This review proved to be tough to write, because Mac addicts simply aren't interested in PCs. However, one of the challenges of being a Mac user in a Windows world is the plethora of games available for the PC. Over the years many Mac gamers have abandoned their machines to play on PCs, and some have turned to software emulators such as Virtual PC and SoftWindows to play PC titles. Some gamers even have a PC just to play some of the cool games that will never be ported to the Mac—and it's a long, long list. If you want to play PC games on your Mac and can't tolerate slow-as-a-snail software emulation, then Orange Micro's PCfx is the only hardware-based solution available, short of buying a PC.

Orange Micro bills the PCfx as the "ultimate game card," but don't expect its specs to blow you away. The PCfx sports a 200MHz Pentium-compatible processor with MMX, the IDT Winchip C6, and nVidia's Riva 128 2D-3D graphics chip. It also ships with 32MB of RAM in a single memory slot, along with Windows 98, whose DirectX supports the Riva 128 and allows nearly all 3D PC games to access hardware acceleration. Emulators included in the OrangePC setup application use your existing sound system,

modem, and ADB controllers. This emulation of Mac peripherals makes the PCfx a very convenient package.

Installing the 12-inch PCfx could present problems if you've already got a couple of cards installed. Though our 233MHz Power Mac G3 has three roomy 12-inch PCI slots, we had to switch cards to accommodate the PCfx—the RAM module sticks out 1 inch from the card. A provided pass-through cable and adapters connect the PCfx externally to the Mac's onboard video. As for the software installation, Orange Micro presets all the necessary drivers, making it a breezy step to Windows 98.

In performance the PCfx unequivocally stomps any software emulator, but frame rates take a severe hit in the heat of frenzied polygonal action. The PCfx's Winchip is out of its league when it comes to the latest PC games and can't feed the Riva 128 fast enough. For example, the included demo of Battlezone looks smooth until a heavy assault; then you're left hoping for a mere 10 frames per second. The Powerslide demo was also slow. Furthermore, the Riva 128 doesn't deliver the same graphics performance as 3Dfx's Voodoo2 or Voodoo



Photo by KB

THE PCFX DOESN'T LACK SLICK ENGINEERING, as all these jam-packed components on a long-form PCI card show.

Banshee, both of which sell at low prices for PCs. If you look past the advertising hype, however, the PCfx delivers perfectly decent power for 2D strategy games and the 3D hit titles of 1997.

A few quirks popped up in the emulation software: Sound breaks up occasionally, keys stick in games, and freezes require a hard restart. Also, the lack of working interrupt key combinations renders Windows 98's vaunted memory protection useless. The PCfx's dual-processing capability—you can play a game on the PC side while downloading to the Mac partition—may enhance productivity, but with only one hard drive the background application runs at a glacial pace.

Is the PCfx a good buy? It's the only hardware out there for a Mac gamer who doesn't want to buy a PC. But at \$649 it's not exactly a small investment (Microsoft's \$135 cut for Windows 98 squeezes the bottom line). For \$150 more, you could buy a PC equipped with a dramatically faster CPU, such as the AMD K6 with 3D Now. Considering both value and convenience, we recommend the PCfx only to gamers who need a decent hardware solution for a quick fix of Quake II or Forsaken. But with more and more games coming out for the Mac, the need for the PCfx is becoming less urgent. You're better off playing breathtaking, hardware-crunching games such as Unreal natively on a G3 with a Voodoo card.—*Samuel Parker*

PC Games on a Mac? No Way!



The PCfx allows you to play Battlezone with somewhat decent performance. Here, not a lot is happening.



However, once the action gets hot and heavy, frame rates plummet, making playability painful at times.

GOOD NEWS: Plays PC games on your Mac. Much better performance than with software emulation. Mac and Windows programs can run simultaneously. **BAD NEWS:** Uninspiring 3D performance. Imperfect sound emulation and stability. Not much cheaper than a PC.



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Anarchie Pro 3.0 versus Transit 1.1.1

COMMUNICATION

Anarchie Pro 3.0

COMPANY: Stairways Shareware

CONTACT: <http://www.stairways.com>

PRICE: \$35 (SRP)

REQUIREMENTS: System 7 and MacTCP 1.1 or later (System 7.5.5 and Open Transport 1.1.1 or later highly recommended)

Transit 1.1.1

COMPANY: Panic Software

CONTACT: 503-296-2185, <http://www.panic.com>

PRICE: \$24.95 (SRP)

REQUIREMENTS: System 7.5 or later, Open Transport recommended

File transfer protocol (FTP) is an often-ignored Internet protocol. It's important nonetheless, especially if your duties require transferring files to and fro all day. The file transfer features in both Navigator and Internet Explorer are sufficient for downloading files, but that's it. Webmasters need more-powerful FTP tools, and the newly released Transit 1.1.1 and recently updated Anarchie Pro 3.0 are sound options.

Both Anarchie Pro and Transit offer standard FTP features, including the ability to upload and download files simultaneously from multiple sites or directories. Both offer drag-and-drop functionality, and you can configure them to use InternetConfig's file mappings. However, the similarities stop there.

Anarchie has been around since the days of the once-popular Archie protocol.

Unfortunately, Stairways Software hasn't updated Anarchie as much as it should have, so the program suffers from a bland interface with small, generic icons and no style. However, the bare-bones interface doesn't mean that Anarchie Pro isn't a powerful client. For example, its ability to open multiple folders per site—double-click a folder, and a new window opens—saves Webmasters hours they would otherwise spend switching from directory to directory.

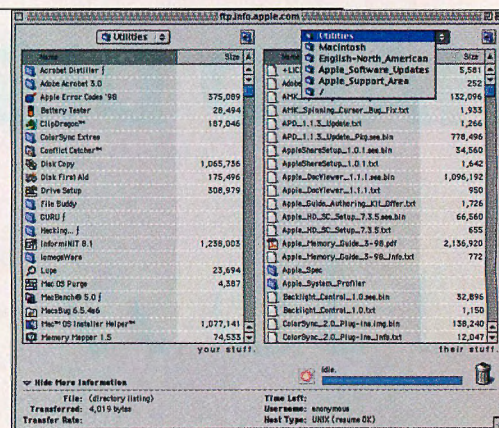
Anarchie Pro 3.0 also features rudimentary mirroring of local sites and the retrieval of entire Web sites, though devoted tools such as Web Devil do these tasks better. You can also integrate Anarchie Pro with BBEdit via AppleScript or a wide range of other applications, and Anarchie Pro offers the ability to search Info-Mac archives and resume downloads.

Transit 1.1.1, on the other hand, has a fresh interface: It implements Mac OS features such as drag and drop and contextual menus well and widely. Like Anarchie Pro, it can resume downloads and uploads, but unlike Anarchie Pro, Transit features Progress icons, a bar on the Finder icon that updates to show the download's progress.

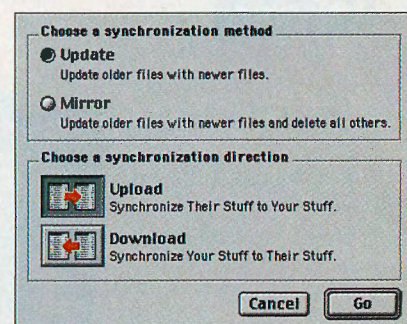
Transit's two-pane method of operation is refreshing. At a glance, Webmasters can tell which files to upload, which to delete, and which are just fine. A Graphic Preview feature allows you to preview local images before uploading them. Transit is fully multithreaded:

You can navigate through Your Stuff in the left pane while uploading a series of files to Their Stuff in the right pane. While both Anarchie Pro and Transit have a Synchronize feature, Transit's implementation causes fewer mistakes, as it compares a file's modification

dates before transferring. The early version of Transit suffered from disconnection problems, but Panic Software has solved this in version 1.1.1 and added site redial so Transit redials busy servers. This fea-



TRANSIT 1.1.1'S MULTIPANE approach makes comparing local and distant FTP sites a breeze.



SYNCHRONIZE YOUR WEB SITE in either direction with this Transit 1.1.1 feature.

ture alone is worth the price as you try desperately to download the hottest game demos from a busy server.

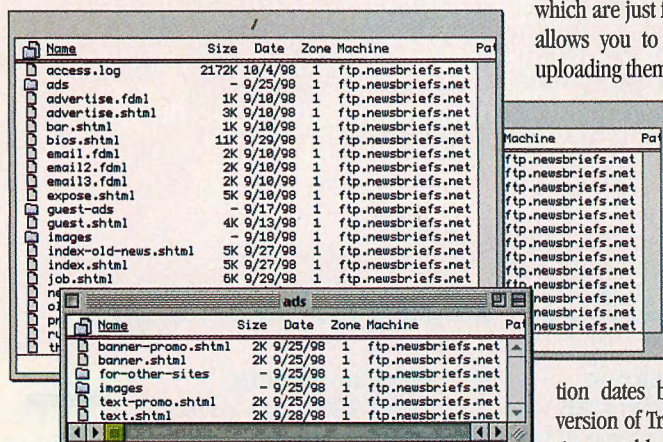
Is Transit flawless? No. You can't drag over multiple files to select them in Transit's views. Doing so will select (and move) only the first item. You can use the keyboard to work around this problem, but you shouldn't have to work around your software in the first place. Both Anarchie Pro 3.0 and Transit 1.1.1 are fine FTP clients.—*Erik J. Barzeski*

Anarchie Pro 3.0

GOOD NEWS: Multifunctional. Very responsive. Multiple windows per server. **BAD NEWS:** Somewhat inconsistent and non-Mac-like interface.

Transit 1.1.1

GOOD NEWS: Attractive interface. Solid synchronize and Image Preview options. Two-pane viewing. **BAD NEWS:** You can't drag to select multiple files.



ANARCHIE PRO 3.0 lets users open multiple windows per site—a useful feature indeed.

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QuarkImmedia 1.5

MULTIMEDIA

COMPANY: Quark

CONTACT: 307-772-7100, <http://www.quark.com>

PRICE: \$395 (SRP), \$129 upgrade

REQUIREMENTS: Power Mac, System 7.1.2 or later, monitor capable of displaying 256 colors or grays, 3.5-inch floppy disk drive, CD-ROM drive, QuarkXPress 4.02 or later, QuarkXPress Passport 4.02 or later, QuickTime 3.0, an additional 4MB of RAM for QuarkXPress, Adobe Type Manager for Type 1 fonts

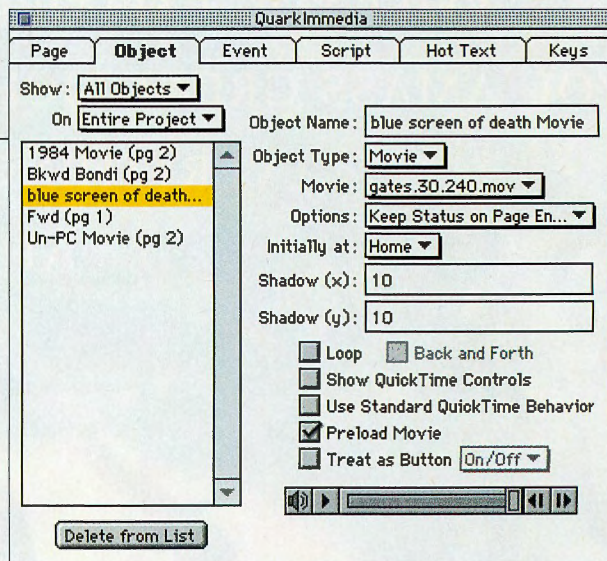
Quark's latest version of QuarkImmedia boasts excellent new features and is powerful, full-featured, and the most intuitive and least intimidating multimedia creation tool we've seen yet. It should be especially inviting to those already familiar with the QuarkXPress page layout package, which it requires to run. You can transfer Xpress's familiar print-design concepts to the tools that Immedia adds, without disturbing your workflow. This is possible because Immedia plugs into XPress as an XTension. In short, XPress users can achieve basic proficiency in Immedia much more quickly than with competing multimedia tools such as

Macromedia Director. Immedia 1.5 brings compatibility with XPress 4.02, along with a slew of great enhancements.

Previous versions of Immedia let you create projects that were limited to 8-bit color (256 colors), but with version 1.5 you can now realize projects that use 16-bit color (thousands) or 32-bit color (millions), if you prefer. For projects set to 8-bit color, each page can now have a unique 256-color palette. Also new is the ability to display an object with a specific level of opacity, and objects can now have drop shadows. Neither of these features' effects appear on the page while you're creating it; instead, you view your work only when you engage the project for testing or export it to a stand-alone format.

Quark has improved Immedia's text handling, which now includes indexing (the ability to search for alphanumeric sequences instead of just words). This is a boon if you're creating an electronic product catalog, for example, and may need to search for product orders or part numbers, such as an SKU like #858dx2.

Immedia 1.5 also offers an improved debugging feature that displays more information than previous versions did. We found its information extremely useful when investigating why some action or object didn't behave as we thought we had specified. Furthermore, you can now attach comments to Immedia scripts, and the comments appear helpfully in the debugger. This is a good way to jot down notes about how or why you created a script. The



QUARKIMMEDIA PLUGS into QuarkXPress to let you create multimedia projects without having to use code.

new version also allows you to print hard copies of scripts. (A script, as Immedia defines the term, isn't like an AppleScript. It's simply a string of actions you want Immedia to carry out when, say, you click an object or an item in a custom pop-up box or menu bar.)

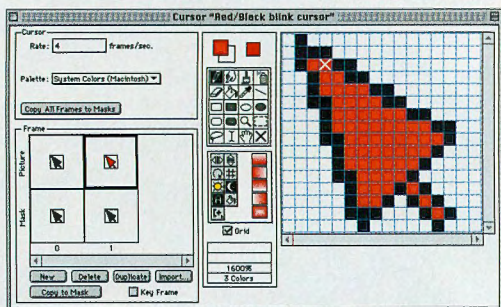
Immedia 1.5 lets you use several kinds of animated effects. You can directly import PICS animations from other applications into Immedia's Animation Editor dialog box and tweak them there. However, if you have no programs with which to do PICS animations, you can create the frames directly in the Animation Editor. You can also copy and paste individual frames from other programs if PICS export isn't available. The Editor shares tools and a similar interface with the Button Editor and Cursor Editor (which, of course, allow you to create custom buttons and custom animated cursors).

If you're a Mac old-timer and like the pixel-by-pixel painting method of MacPaint, you may not mind creating in Immedia's Animation, Cursor, and Button Editors. We don't have the patience for that, however, so we appreciate Immedia's ability to import images and PICS animations and to paste them from the Clipboard. In fact, by using a screen-capture utility that let us capture to the Clipboard and save only what we selected, we were able to capture an iMac image from a paused QuickTime movie and make it into a button.

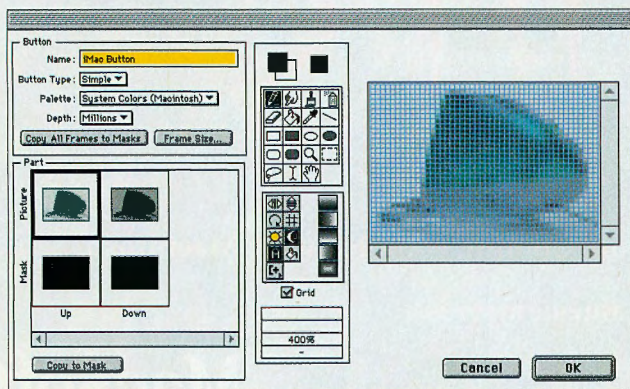
Another very cool feature that's new in version 1.5 is the ability to use Adobe Photoshop-compatible plug-ins to create or edit animations, cursors, and buttons. We created a simple animation, then made it a



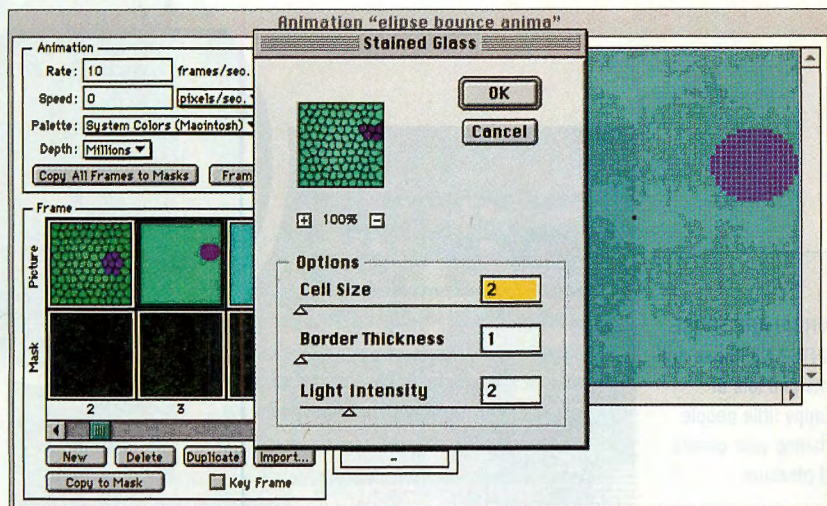
FIND A DEMO of QuarkImmedia 1.5 on The Disc.



IMMEDIA'S CURSOR EDITOR SHOWS a colored, two-framed, animated cursor.



WE PASTED AN IMAGE into the Button Editor. For the "mouse down" state, we darkened the image by clicking on the crescent-shaped tool-pad icon.

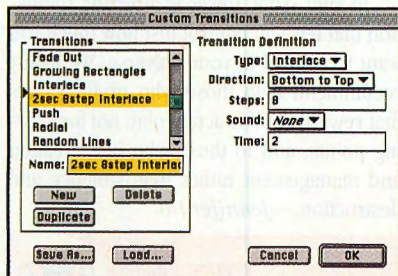


little more interesting with the Stained Glass texture filter that also comes with Photoshop 4. (Compatible image-editing plug-ins conform to version 4.0r2 of Adobe's Filter Interface specification.)

Version 1.5 also optimizes projects better than previous incarnations of Immedia did, so your exported creations run more efficiently, whether from a hard drive, from a CD-ROM, or over the Internet.

Speaking of the Net, if you wish to create projects for viewing on the Internet or an intranet, new actions are available for downloading files and sending email, along with several other goodies, and Immedia can test them while you create your project. When you export the project for Internet use, Immedia can generate an HTML-formatted description of it that Internet services such as Lycos, Infoseek, and AltaVista find and read.

With Immedia 1.5 you can create some great stuff for display on your Web site. However, you'll need to consider whether people visiting your site will be willing to download yet another large viewer app, which they'll need for live viewing of your creation. If you want to provide Immedia-based content, you'd do best to provide the same content in HTML pages as well. One excellent use for Internet viewing of Immedia projects is client proofing: Give your multimedia clients a copy



IN THE CUSTOM TRANSITIONS EDITING dialog box you can specify transition type, number of steps, direction, and default time for completion, as well as assign a default sound file.

WITH VERSION 1.5 YOU CAN USE PHOTOSHOP FILTERS that conform to Adobe's 4.0r2 Filter Interface specification. Here we're using the Photoshop 4's Stained Glass filter from within Immedia's Animation Editor.

of the freely distributed QuarkImmedia Viewer and point them to, say, a hidden directory at your site. This could be handy for presenting prototype projects and getting approvals.

For those who want even more from Immedia, other new features include variables, functions, and expressions, giving Immedia many of the abilities of a programming language. We found one odd but harmless glitch with the QX-Tools 4.0 collection of XTensions from Extensis: Any QX-Tools palettes that were closed when we engaged a project would open when we disengaged and returned to editing mode in QuarkXPress. Extensis and Quark are aware of the problem, so perhaps a patch will be released by the time you read this.

If you're totally new to multimedia creation and are sweating at the thought of figuring out terminology such as *button states* and *key frames*, take heart and start perusing *Multimedia Basics*, which ships with Immedia 1.5.

Like any full-featured, professional-level tool, QuarkImmedia takes experimentation and time to master. But it's easier and more inviting than other multimedia packages, so you can focus on creating instead of on learning and writing code.—Elyse Chapman

GOOD NEWS: Easiest, most powerful multimedia tool, especially for QuarkXPress users. Intuitive tools encourage experimentation. Lets you create simple projects after minimal time investment.

BAD NEWS: Harmless but bothersome interaction problems with some third-party QuarkXTensions. Needs fast CPU for creation and viewing (although you can view very simple projects on a 68030).



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Yoot Tower

FUN & GAMES

COMPANY: Sega PC

CONTACT: 925-371-3131, <http://www.segapc.com>

PRICE: \$29.99 (SRP)

REQUIREMENTS: Power Mac, System 7.5 or later, 32MB of RAM, 100MB of free hard disk space, 2X CD-ROM drive

Yoot Tower, the sequel to the classic SimTower, is here for all you aspiring real estate moguls. Thought you could never afford your own three-star luxury hotel on Waikiki? How about one at Kagon Falls in Japan? Or what about a world-class tower right in the middle of Tokyo, where real estate prices are astronomical? If you like simulations and to-die-for properties, you'll like the highly enjoyable Yoot Tower, which comes complete with please-us-or-we-leave-you tenants.

At first glance, Yoot Tower's graphics don't dazzle—they're pretty similar to

WHOA! ARE THOSE ANTS? No, those are lots and lots of happy little people visiting your palace of pleasure.

those of SimTower, albeit more refined. Don't expect an isometric point of view: You see everything straight on in a cutaway view. Yoot Tower won't attract gamers with its sound, either—there's no sweeping soundtrack replete with orchestral stirrings and bravado. On the other hand, you shouldn't let this title's simple graphics and sound stop you from getting into the simulation.

In Yoot Tower you have one basic goal: Keep all tenants, tourists, and visiting VIPs happy and stress free. If your guests run into bad service or inadequate facilities, they'll leave and never come back. Then *you* get stuck with vacancies and not enough revenue to keep your tower in tip-top shape. Also, if you hope to raise your rating from one to two or three stars, you'd better please those inspectors.

Yoot Tower is thoroughly enjoyable for the widest audience of gamers. Its ease of use and low system requirements will appeal to casual



players, while sim veterans will relish controlling all the variables and parameters to produce an efficient, self-sustaining microcosm. For example, you can set Yoot Tower to a slow speed and a minimal population. In fact, it's a good idea to start off small and raise revenue for building-expansion projects. On the other end of the spectrum, you can put the game in high gear and expand your domain quickly, tower by tower, just as Napoleon took on country after country following the French Revolution. Don't get too ambitious with suites and condos, though, or you'll be facing belligerent tenants in a real estate Waterloo.

Yoot Tower may sound easy to play, but once you construct a tower whose population climbs into the thousands (that can mean 8,000 or more), managing your property becomes quite challenging. It demands not only multitasking, but also attention to individual rooms, event halls, restaurants, and transportation systems. You must accept accidents and natural disasters as part of the deal, too. Recovery from fires or terrorist bombings requires the strategic placement of security offices in your tower—not to mention the all-important housekeeping units, which keep your castle free of creepy-crawlies.

In sum, Yoot Tower is a terrific simulation that lets you control just how much you want to control in your universe. We highly recommend it to those who prefer games that reward you for actual play, not for scoring points, and to those who like creation and management rather than violence and destruction.—Jennifer Ho

GOOD NEWS: Easy, intuitive gameplay. Plug-in structure allows expansion. Rewards aren't based on winning. Hours of fun. **BAD NEWS:** No support for thousands of colors.



Tips for Teetering Towers

Go Slow: Set the speed to slow and the population to low. Build your first structure to full capacity, then expand by building more floors.

Safety First: Remember to put in security offices for hunting down bomb-wielding terrorists and snuffing out fires.

Make Money: Don't forget that you can put billboards on the outside of the building to make money. Rotate the ads.

EACH PERSON'S HOME IS A CASTLE, and although Yoot Tower's less-than-thrilling graphics may leave you dreaming of castles in Spain, the simulation is quite lifelike.



reviews



reviews

Kids' Stuff

Backyard Soccer

COMPANY: Humongous Entertainment

CONTACT: 800-499-8386, <http://www.humongous.com>

PRICE: \$19.99 (SRP)

REQUIREMENTS: Power Mac 90MHz or faster, System 7.1 or later, 16MB of RAM, 4X CD-ROM drive

If you're a 10-year-old who's totally into soccer, Backyard Soccer is for you. For starters, as the coach you can choose from 30 cute multicultural characters for your team. Each player comes with a mini-bio and special skills. You can also pick your team's name and colors and what type of field to play on. Once your team is on the field, you can choose to be a spectator or actually play. (The controls are a bit hard to master at first, so starting as a spectator is a good idea.) After the game, you can see what happened in instant replay, with kid-level sports commentary that goes on a bit too long. If you're into stats, all your players' and teams' numbers



are available for a whole season of play.

We recommend this game to any pre-teen soccer fan, but we don't think it's appropriate for the low end of the stated age range. Five-year-olds might not understand the controls or strategy. (The game offers three skill levels, so older kids can ramp up to regular or hard play.)

Gameplay gets easier with practice, and you can customize it on the fly by substituting players or making them play more aggressively. But the Mac version suffers next to the Windows version because you

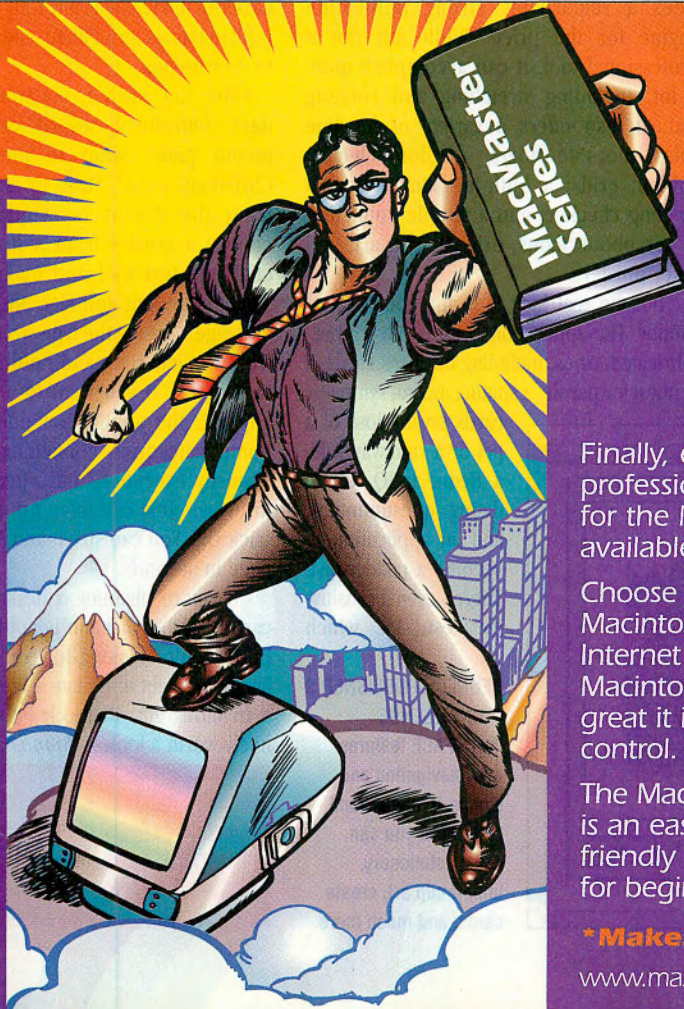
can't use a two-button mouse to control running and kicking at the same time. You also can't play against a real opponent, just against the computer. Still, Backyard Soccer is a groovy sports game for kids and adults alike, so put on your virtual cleats and kick off today.—*Miriam Anzovin*



GOOD NEWS: Very cute. Cool instant replay. Balanced characters. Pickup games. **BAD NEWS:** Animation parts are too gabby. No Internet play.



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Redneck Publisher

DESIGN & GRAPHICS

COMPANY: Staz Software

CONTACT: 800-348-2623 or 228-255-7085, <http://www.stazsoftware.com>

PRICE: \$29.95 (SRP)

REQUIREMENTS: System 7 or later, 2MB of RAM, 4MB of free hard disk space, 2X CD-ROM drive

Here's a special treat for every redneck, cracker, and good ol' boy from Florida to Texas (as well as all you would-be Bubbas hiding in the East, up on the Northern Plains, and out on the West Coast). It's called Redneck Publisher, and it's perfect for get-out-of-jail presents, belated birthday gifts, and NRA induction ceremonies.

From the moment you open the package, you know you're in for some chuckles. The CD label identifies the application with a red-pencil scrawl, two pieces of rough-hewn art, and a warning note that reads "Do Not Eat." Once you install the

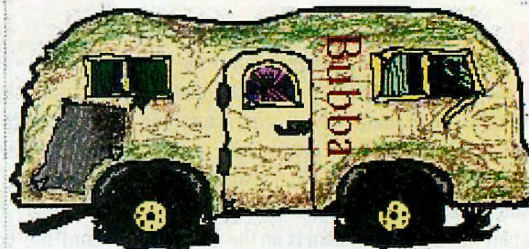
program, even the icon has a homespun look—a yellow folder with a couple of random bullet holes. Open the folder and you find an outhouse (the Redneck application) and two chicken drumsticks in freezer bags (tutorials). Get used to the chicken legs. Any document you create and save will also appear as a drumstick in a freezer bag.

Oddly enough, Redneck Publisher provides a remarkably strong publishing engine for the price. While it's not a professional tool, it can accomplish quite a lot, including stretching and rotating text. It also offers a variety of hairline rules; movable rulers; a color selector; column grids; a built-in paint editor; a spelling checker; and a sizable collection of scrapbook icons, original clip art, and fancy borders.

But the real kick is in the good-ol'-boy humor. The application comes with 27 prefabricated forms, including business cards, a request for parole, a spitting award, sympathy cards on the loss of a pet or a runaway wife, a Redneck IQ test, a dating questionnaire, and an application to become a taxidermist. There's even a sensitivity test in which

REDNECK PUBLISHER'S NO-NONSENSE INTERFACE features easy navigation and simple-to-understand buttons so you can design stationery, import clip art, create cards, and much more.

I miss our trailer.
I miss our nine kids.
But most of all...



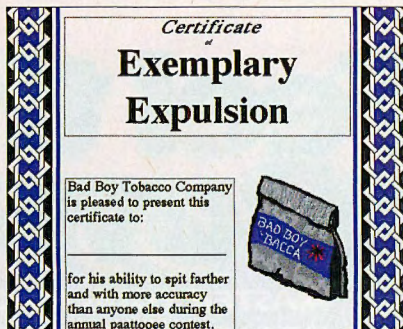
IT MAY BE LOWBROW, but Redneck Publisher lets you create all kinds of cards for all kinds of occasions.

Redneck Publisher asks you such challenging questions as, "Why do women have smaller feet than men?" (Answer: So they can stand closer to the kitchen sink.) All you have to do is fill in names, print them, and pass them out to your friends.

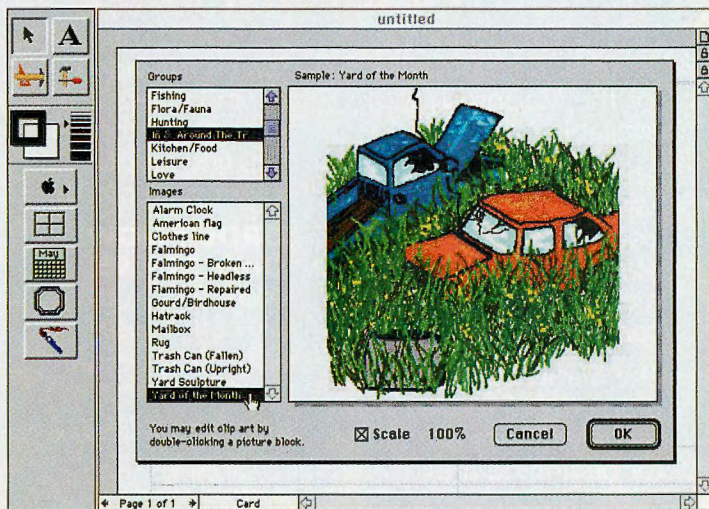
You can easily make your own calendars, letterhead, award certificates, or memo pads. Want to put together a Christmas card? Start by selecting Card from the document window. You can choose a border from a list of 30, then click the text tool and make a text box. Select your font and size, then type in the message. Change the type size, style, or font with a quick click-and-hold drag over the type block. If you want to add a piece of clip art, the application offers 19 down-home categories containing almost 200 clumsily executed (and often very funny) drawings. Just call them up, pick one, and click OK. You can size it and place it on the page in seconds.

If you're planning a desktop publishing career, this application is not the way to go. But if you're looking for some ready-made laughs or want to irritate a friend by sending a frivolous gift, Redneck Publisher is definitely worth a look. —John Lee

GOOD NEWS: Unexpected power in publishing engine. Easy to use. Lots of good-ol'-boy clip art.
BAD NEWS: After the laughs, its usefulness decreases.



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power play

You can run but you can't hide from all the game-gossip goodies.

GameWIRE

Once again we bring you the talk of the town. How about the bad news first? **CYBERFLIX**, the developer of *Titanic: Adventure out of Time* and *RedJack: Revenge of the Brethren*, **HAS QUIT THE GAME**, citing a tough game market underwhelmed with the adventure genre. However, what's left of Cyberflix will continue to license out its proprietary engine, DreamFactory. If you haven't noticed, the adventure genre has been languishing, with many PC game pundits postulating its passing.

On a positive note, Apple released a **NEW VERSION OF GAME SPROCKETS**. Game Sprockets is a mighty important set of libraries that game developers use for their games and game-peripheral

CYBERFLIX SINKS, but you can still walk on *Titanic: Adventure out of Time*.



functionality. Make sure you've updated yours, because the new versions improve screen drawing and networking, and offer support for new peripherals, including additional support for USB. Also on the update path, Westlake Interactive has **UPDATED UNREAL** from newly reworked PC code, so we tested Net deathmatches on Mplayer's Unreal server and got surprisingly good pings (100 to 200 was typical), steady connections, and great response time.

Speaking of totally Unreal news, Epic Megagames and GT Interactive announced **UNREAL 2**. What it is we don't know just yet, but if it's Unreal it will rock hard, baby. Will Blizzard's *Starcraft* expansion pack, *Brood War*, ever get going for the Mac? **CENDANT**, which includes Sierra and Blizzard, **WAS SOLD** to a French company, Havas. PR reps say nothing will change, but if it does, you'd better brush up on your French so you can yell at big frog-mages about *Starcraft* delays.

Even better, we recently spoke to former MacSoft **BIG CHEESE PETER TAMTE**, and though the consumer marketing director



works behind Apple's iron curtain of information, he was able to tell us that 1999 will be better than ever for Mac games. Why? First, more near-simultaneous releases and second, Apple is aiming at **50 HIGH-IMPACT GAMES** or more for the Mac. Will Apple court game developers into consummated marriages, or will it suffer from unrequited love? To attract sexy companies, Apple even performed a makeover on its game developer Web site. But what about unrequited lust?

Lust can be good. Mac gamers lusting after more games begged PSEmu to port its **PC PLAYSTATION EMULATOR** to the Mac, and the developers said yes. Don't buy your games yet—the PSEmu for Mac won't be out until later this year. And we're waiting for Apple to ship the new Power Macs that give better game to all!—JH

GAMES & GEAR

While Blizzard cruelly keeps you waiting for *Starcraft* and *Brood War*, you can cry yourself to sleep holding these cool Blizzard action figures, which represent characters from best-selling strategy titles *Warcraft* and *Starcraft*. Check out the Orc and Human from *Warcraft*, and the Zerg, Terran, and Protoss from *Starcraft*! The figures stand around 6.5 inches tall and are capable of multiple articulations. Best of all, they cost only \$10 to \$12 each.—JH



TOP 10 MOST WANTED GAMES

Can we have them, please?

RANK	GAME TITLE	PUBLISHER	GENRE
1	Half-Life	Sierra Studios	action
2	Rainbow Six	Red Storm Entertainment	action
3	Grim Fandango	Lucas Arts	adventure
4	Caesar III	Sierra Studios	strategy
5	Ultima Online	Origin	role-playing
6	Shogo: Mobile Armor Division	Monolith Productions	action
7	Madden NFL '99	Electronic Arts Sports	sports
8	Quake III: Arena	id Software	action
9	SimCity 3000	Maxis/Electronic Arts	simulation
10	Duke Nukem Forever	GT Interactive	action

Do You Do Voodoo with Your Mac?

Voodoo2 and Voodoo3 available for every Mac this year

3Dfx Interactive announced Voodoo3 at Comdex to much fanfare. Perennial king of the 3D acceleration hill, 3Dfx Interactive has faced competition only from nVidia, which makes the ultrapotent 2D and 3D graphics accelerator Riva TNT. The 3Dfx answer to TNT is Voodoo3, a 2D and 3D graphics accelerator in the tradition of Voodoo Banshee. On the lighter side of things, Voodoo3 boasts twice the polygonal performance of Voodoo2, or 7 million triangles per second. On the hot and heavy side, Voodoo3 will support regular monitors, LCD monitors, and HDTV, achieving resolutions up to 2,048 by 1,536 at a 75Hz refresh rate—woah. The mind-boggling feature set will also include MPEG2/DVD acceleration. Texas-based Micro Conversions, which licensed Voodoo2 for its Game Wizard accelerator card, will bring Voodoo3 to the Mac as well. It hasn't named any cards yet, but what's in a name? You can call Voodoo3 by any other name,



Voodoo3, more powerful than most CPUs in use today, is the next-generation graphics chip set that will blow your mind away with millions and millions of pretty little polygons.

and it would still smell as sweet! In another stunning development, Micro Conversions has made an 8MB Voodoo2 Game Wizard for the iMac. The card interfaces with the iMac motherboard via the famed mezzanine slot, and boy, does it work! It debuted at January's Macworld Expo in San Francisco, so who can say the iMac ain't got game?—JH

ask the game guru

Q: I want to buy a 3D accelerator because I hear a lot about them. But I don't want a video card; I just want the accelerator. What do you recommend?

a. Computer jargon is confusing, isn't it? A 3D accelerator is a type of video card, but not all video cards are 3D accelerators. The 2D and 3D graphics accelerators you want are called video cards because you connect your video display to the card, which channels video data much faster and better than your typical onboard video graphics chip. Video cards also provide higher resolutions and color depths because they house their own video memory such as VRAM or SGRAM. If you want 3D acceleration for games, then check out any Voodoo-based or Rage-based card. Gamers prefer the Voodoo family because of its faster rendering performance, so research VillageTronic's MacMagic or MacMagic Pro (<http://www.villagetronic.com>), or Micro Conversions' Game Wizard (<http://www.microconversions.com>).

power play

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how to

We're proliferating panoramas and plug-in-powered photos, so pay attention.

Stitch a QuickTime VR Panorama

by David Reynolds

We've all done it—taken a bunch of end-to-end photographs and taped them together to try to make one *really* big photo. But a taped-up ribbon of pictures has some problems—the marks between images, mismatched edges, and skewed placement—so we recommend plunking down a few bucks and picking up a panorama-stitching program. There are several of these packages, but we prefer Live Picture's \$65 PhotoVista (408-371-4455 or 800-724-7900, <http://www.livepicture.com>), because it's easier to use and more reliable than Apple's QuickTime VR Authoring Studio, Enroute's QuickStitch, and Roundabout Logic's Nodester. We hit some big roadblocks with the other packages.

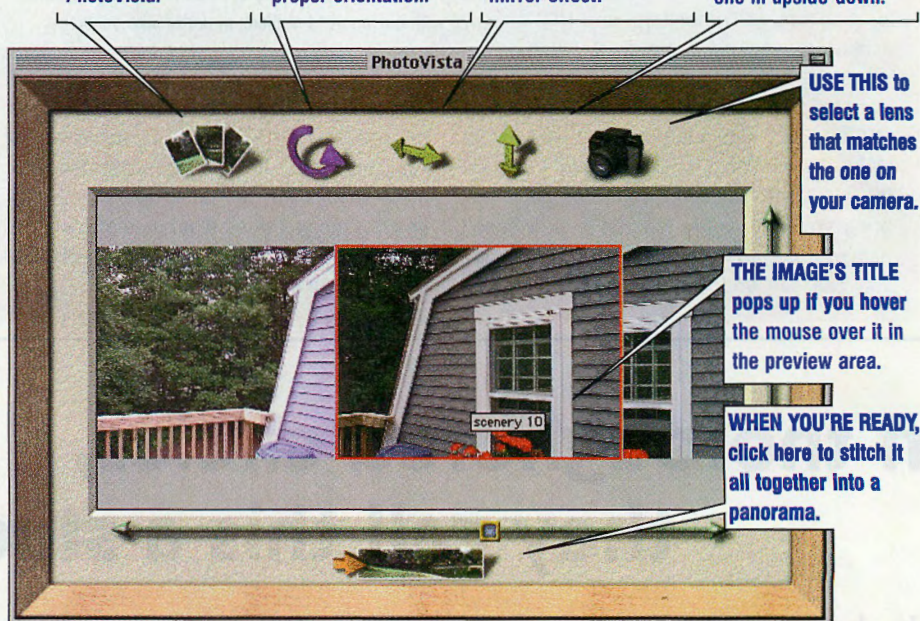
Read on to make your own panorama sans transparent tape. You just need some photos to stitch (either digital or scanned from film), PhotoVista, and QuickTime so you can view your panorama as a QuickTime VR movie.

CLICK THIS to import your images into PhotoVista.

USE THIS to rotate your images to their proper orientation.

FLIP IMAGES horizontally for that cool mirror effect.

FLIP IMAGES vertically if you scanned one in upside-down.



LIVE PICTURE'S PHOTOVISTA is the easiest panorama software we've found.

Getting Started

Here are some tips to help your photos look their best as a whole:

Keep the flash on or off. If the flash goes off in some photos and not in others, the photos will look different in both brightness and color.

Put the camera in manual mode. Alterations in lighting that cause significant changes in shutter speed or focus can result in dramatic differences between photos.

Use a tripod. Although you can create a pretty good panorama with a handheld camera, you should use a tripod if you have one.

A DECK IN MAINE, AN EPSON PHOTOPC 500 digital camera, and 14 photos later, we have this spiffy wraparound photo stitched together with PhotoVista.



1 Just Shoot It

To stitch together a panorama, you'll need to take pictures that wrap around—that is, the right side of one picture must be the same as the left side of the next. You can do a quick-and-dirty panorama (as we did while making our sample) by taking a picture and then turning a bit while looking through the viewfinder until the second photo overlaps the first by a small margin—say, 10 percent or so. An easy way to do this is to pick a landmark near the right edge of the frame, and then turn to the right enough so that it appears in the left side of the frame. When you're taking your pictures, you need to be aware of the two kinds of picture orientation: portrait (tall and narrow) and landscape (short and wide). In landscape orientation, expect to shoot around 12 to 14 pictures; in portrait orientation, expect to shoot 16 to 18.



how to

TAKE PICTURES either vertically (portrait) or horizontally (landscape).

2 Get 'em in

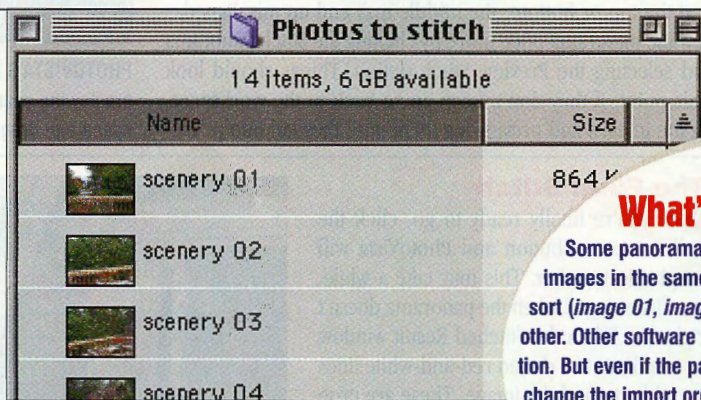
After you've shot your pictures, get them into your Mac. If you're using a film-based camera, scan the photos in and save them as high-quality JPEGs. If you're using a digital camera, its software will probably download your pictures as JPEGs. Although you'll want high-resolution images, don't make the scans too large or you'll choke your panorama software—try scanning at 100 to 150 dpi. Once your photos are scanned into your Mac, you can fine-tune them (correcting such things as color and focus) by using an image-manipulation program such as Adobe Photoshop. Be careful when making changes, though: You want the images to have the same feel, and if you alter one image without altering all the others to a similar degree, that altered picture is going to stand out.



HERE'S WHERE CONSISTENT photography makes a difference. Notice how the color shifts between the left-hand image and the one in the center. It's not a deal killer, but it doesn't look great.

3 Put Your Pictures in a Row

Put all your images in a new folder and view them as a list. Although panorama-stitching software is getting smarter, it's still a good idea to name the pictures so that the software will import them in the proper order. So what's the proper order? The photos should be in the same order as you took them, so that if the images were laid end to end you'd have a panorama. Because of a quirk in the way the Finder (and many Mac applications) reads numbers, you can't name the files *image 1*, *image 2*, and so forth. Instead, you'll need to name them *image 01*, *image 02*, and so on. (Or use letters—*image a*, *image b*—to get them in order.) Use the list view to make sure they actually appear in the correct order.



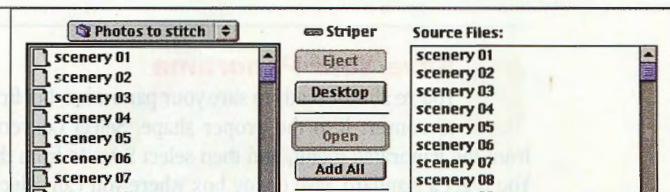
USE ZEROS BEFORE the first nine numbers to force files into the right order in the Finder. It makes life easier later.

What's in a Name?

Some panorama software will read the images in the same order as the Finder's sort (*image 01*, *image 02*, and so forth) and no other. Other software doesn't have this restriction. But even if the package allows you to change the import order, you'll be one step ahead when you're importing photos if you've named them in Finder fashion—odds are they'll arrive in the correct order.

4 Fire Up PhotoVista

Now that your images are in your Mac and in the proper order, it's time to start up PhotoVista. You'll be presented with PhotoVista's main interface, which is pretty darned simple to use. Click the Open Source Images button (the one that looks like three photos fanned out), select the folder that contains your source images, and add them to the project. If you've already named the image files properly, just click the Add All button and then click OK. This imports the images into PhotoVista's workspace in the proper order.



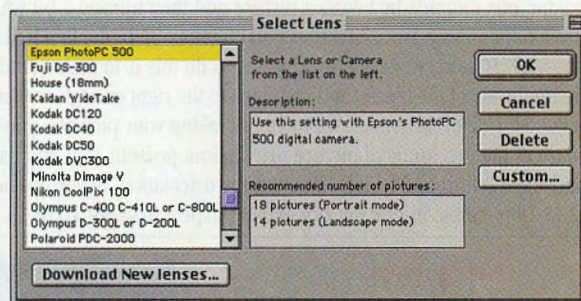
IF YOU'VE DONE YOUR prep work, adding the images you need for your panorama is as easy as clicking Add All.



how to

5 Rotate to Fit

If you took the photos as portraits (as we did), you'll need to rotate them. PhotoVista will import them as if they were landscapes, leaving them rotated 90 degrees in the wrong direction. If you need to, click the Rotate button (the three-quarter-circle arrow) until the images are rotated properly. If you need to flip the images vertically or horizontally, you can do this now by selecting them and then clicking the appropriate Flip button. Finally, before you stitch the photos together, you'll need to select the lens with which you shot them—this tells PhotoVista about the lens size and angle so it can do a better job of stitching the images together. Click the Select A Lens button (the little camera) and pick a lens from the list. If your camera or lens type isn't listed, just select one that's about the same size or create a custom lens.



SELECT A LENS that's close to your camera's lens size. This gives PhotoVista important information about how to stitch the photos.

6 Start Stitching

Now you're ready to put your panorama together. Click the Stitch Panorama button at the bottom of the screen. In the dialog box that pops up, leave the settings as they are and click Preview Stitch. PhotoVista will create a preview of the stitch that you can look over to make sure everything is properly aligned. If it's not, close Preview Stitch and go into the main interface to slide the images around. The yellow angles indicate the edges of pictures. Go to the portion of the panorama where the images didn't stitch properly and move them around until they all match up. Try to do the matching in the midpoint of the picture for the best alignment—if you do it at the top or bottom, the middle may end up misaligned.

Preview the panorama once more by clicking the Stitch Panorama button and selecting the Preview Stitch option. Things should look good at this point; if they don't, keep going back to the workspace, realigning the images and previewing them until they fall into place.



PHOTOVISTA'S AUTOPLACEMENT doesn't always work properly. After previewing your panorama, just grab the errant image in the workspace and drag it into its proper place.

7 The Final Stitch

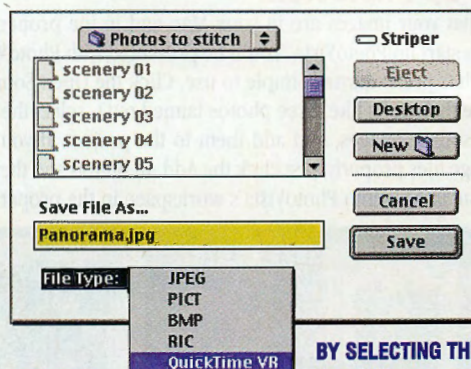
Once you're finally ready to go, click the Full Panorama button and PhotoVista will stitch your photos together. This may take a while, so don't get discouraged when the panorama doesn't just spit right out. When the Stitched Result window comes up, you'll see two dotted red-and-white lines at the top and bottom of the image. These are crop lines. First deselect Crop Symmetrically from the Panorama menu, then adjust the lines to crop out any noise around the top and bottom.



SIMPLY MOVE THE DOTTED red-and-white line below the parts you want to crop out of the panorama when you save it.

8 Save Your Panorama

You're almost ready to save your panorama, but first you'll need to convert it to the proper shape. Select Convert To Cylinder from the Panorama menu, and then select Save As from the File menu. You'll get a standard Save dialog box where you can select the file type for your panorama. If you select any type other than QuickTime VR, your panorama will be saved as a flat panoramic image; that's suitable for Photoshop but won't work for a QuickTime VR panorama. If you select QuickTime VR, PhotoVista will stitch the ends together into a QTVR movie.



BY SELECTING THE FILE TYPE from this screen, you can create either a flat panoramic image or a genuine QuickTime VR panorama movie.

Panorama

- Show Viewer
- Show Panorama
- Adjust Settings...
- ✓ Crop Symmetrically

Convert To

- Cylinder
- Sphere
- Cube

SELECT CONVERT TO CYLINDER from the Panorama menu before saving your panorama movie. You can also experiment with sphere and cube shapes here.

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how to

Plug Into Photoshop Plug-Ins

by Steven Anzovin

Adobe Photoshop (<http://www.adobe.com>) spawned the original plug-in industry, and there are still more plug-ins for this application than for any other. We've played with several new and lesser-known third-party plug-ins—and one that ships with Photoshop—to bring you some fresh possibilities.



USE PLUG-INS FROM Alien Skin, Hot Door, Extensis, and Adobe to add effects to your images.



FIND DEMOS of Harmony, Xenofex, and PhotoFrame on The Disc.

It's a Frame-Up PhotoFrame

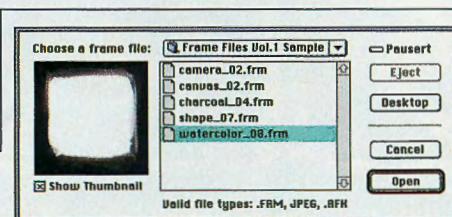
Extensis: 800-796-9798, <http://www.extensis.com>
Price: \$129.95

What's a picture without a frame? You may be a little tired of tatty ripped frames by now—they're so nineties—but sometimes you do need to apply a border. If so, PhotoFrame is the way to go. Not only does it have a zillion ready-made frames available on the included CDs, but you can customize each style infinitely.



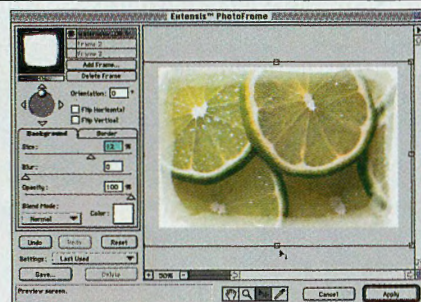
FRAMED UP and ready for Perrier.

- 1** Make sure your image has plenty of space around it for the frame. Many frame styles overlap part of the image, so pictures that have significant elements near the edge may not work well. We chose a photo of limes and are going to apply a watercolor border to it.



CHOOSE a PhotoFrame frame style.

- 2** Open PhotoFrame from Photoshop's Filters menu and click Add Frame. Select a basic frame style from the included CD collection, or use any JPEG with an empty white space in the middle.



SIZE and position the frame.

- 3** PhotoFrame's preview window is great—you get quick feedback on all adjustments, and it's big enough so that you can really see what you're doing. Use the size box in the preview to position the frame, or for more precision use the sliders.

Xenophilia

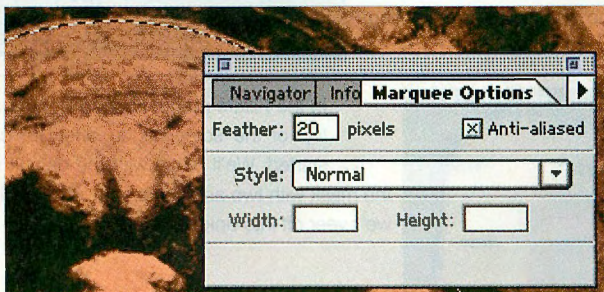
Xenofex

Alien Skin Software: 919-832-4124, <http://www.alienskin.com>

Price: \$129

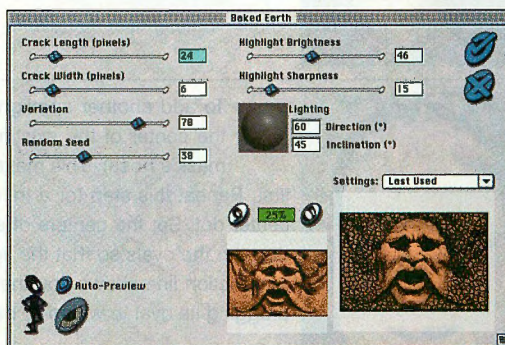
Many plug-ins have practical yet prosaic uses. Others are far less pragmatic but much more fun. Alien Skin Software specializes in the fun kind. Xenofex, the company's latest suite of filters, will help us turn a bas-relief head by Michelangelo into a being of earth, air, and fire.

1 We start by making an oval selection around the face, inverting the selection so that everything but the face is selected, and feathering the selection 20 pixels using the Marquee Options box.



SELECT THE FACE, then invert the selection.

2 We'll use Xenofex's Baked Earth filter to embed the face in a dried mud desert (the earth element). We open the filter and zoom out to a 25 percent view of the image so that most of the picture is visible in the preview window. Setting the Crack Length as a smaller number yields a mosaic look, which is what we are going for here. Setting the Variation high makes sure that the cracks are pleasingly irregular in shape and angle. Click OK. The effect applies only to the selected area, with some feathering into the face.



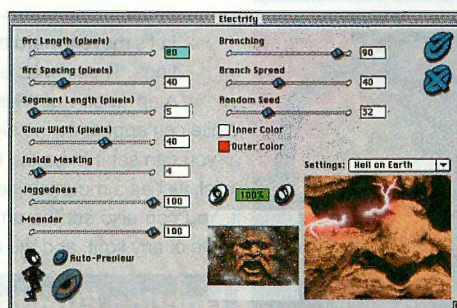
A LOW NUMBER for Crack Length and a high one for Variation give us our earth element.

3 We now feather the selection more, so the next effect overlaps the face further. We'll add clouds (the air element) to show off Xenofex's Little Fluffy Clouds filter. The Scattered Clouds canned settings provide a good basis. Some tweaking of the Puff Size (size of the cloud core) and Coverage (density of the cloud cover) yields the right mix of light clouds with good visibility of the image underneath.

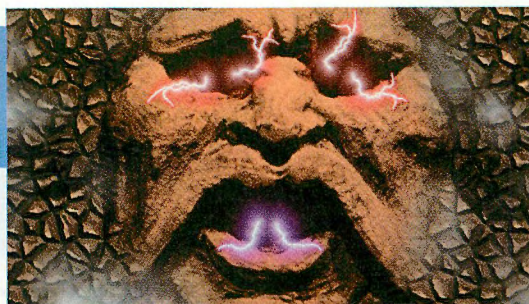


THE LITTLE FLUFFY CLOUDS filter is good for adding basic cotton-ball clouds.

4 Lightning flashing from the being's eyes and mouth takes care of the fire element. To start, you need a selection, so create a small feathered oval selection in one of the eyes, and then open Xenofex's Electrify filter. The Hell On Earth setting, which shoots out twisted red bolts, works well; we increased the Jaggedness and Meander settings to their maximums to make them twistier still.



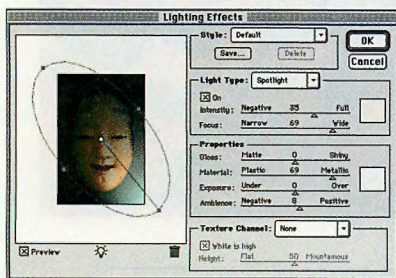
WITH THE ELECTRIFY filter, we've added red lightning that flashes from both eyes, and purple bolts shooting like a forked tongue from the mouth.



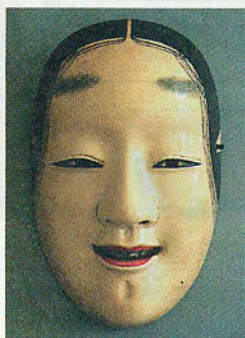
how to

Lights, Please! Lighting Effects Comes with Photoshop!

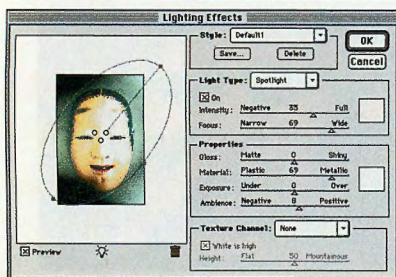
Third-party plug-ins are great, but Photoshop comes with some cool filters you don't have to pay extra for. One of our favorites is Lighting Effects. If you want to bone up on the basics of lighting for photography or theater, here's a good place to start.



THE ORIGINAL MASK has a clear outline but is blandly lit.



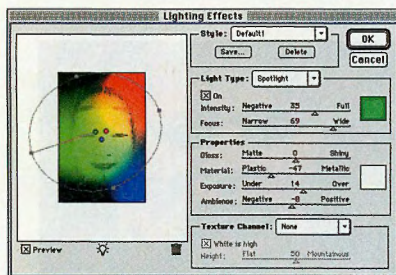
1 In the Filters menu, choose Render and select Lighting Effects. At the top of the screen is a variety of canned lighting styles to get you started. We'll begin with the default setting of one spotlight, then light the mask with two additional spotlights to give it some drama and color. Next, we'll veer off into unknown territory.



ADDING TWO more spotlights creates focus but overexposes the mask's center.



2 To add another spotlight, press the Option key while dragging on the center of the existing light (in this case, the little dot near the mask's nose). This makes a new light with the same settings as the first. Repeat this step for a third light. Activate any light by clicking on its center dot. Set the centers of all the lights in the middle of the mask, but drag on the ovals so that the lights are shining from three different angles (a direction line shows you the angle). Change the spread of any light by dragging its oval to widen or narrow it.



CHANGING THE LIGHT to red, green, and blue increases the image's theatricality.



3 In the settings on the right-hand side of the Lighting Effects box, set the light color, intensity (think wattage), and focus (wide beam or narrow). We've made each light a different color (red, green, blue) and played a bit with exposure to tone down the hot spots. Since the mask has a more plastic than metallic surface, we've also changed some of the Properties to match.



TEXTURE MAPPING adds a surreal effect to the mask.



4 Let's move toward the abstract by playing with the Texture Channel settings. These enable you to treat any of the RGB channels as a texture map (a sort of relief map for the gray-scale values of each channel). White can appear as the highest "altitude," which is the usual way we'd see it, or you can set it to be the lowest. Each light appears to cast shadows on the relief, just as a mountain seen from a plane casts shadows on the land below it. You can also set the amount of relief, from flat to Himalayan. Change the angle of any light, and the relief shadows change, too.

Lighting Effects Tip

Try applying Lighting Effects texture maps over and over again to an image for truly weird results.

[continued on page 76]

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Harmony is a replacement color picker plug-in that helps you select not just colors, but color schemes, too—swatches and sets of colors that look good together. It's a big help for color-challenged types, especially in Web work where a few colors often need to go a long way. Here we've used Harmony and a few other tricks to knock a photo down to a very simple color palette and then change the color scheme.

- 1** We start with a photo of grapes in rich fall colors. In fact, the image contains about 100,000 colors too many, so let's simplify things with Photoshop's Cutout filter, found under Artistic in the Filters menu.

THE ORIGINAL GRAPES image. Nice, but too many colors.



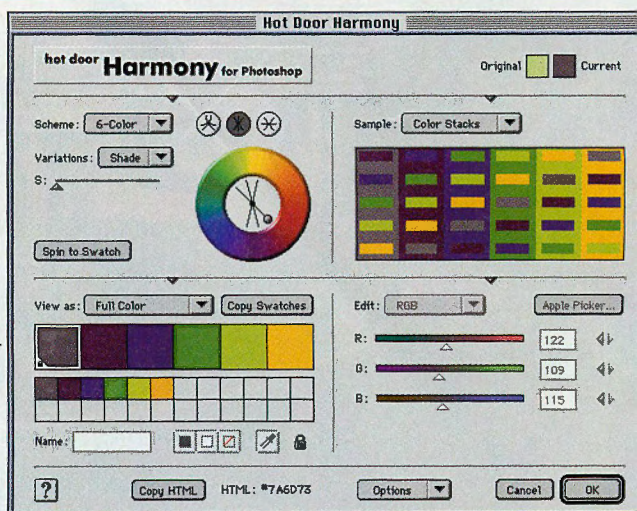
- 2** The Cutout filter posterizes the photo so that it's composed of a relatively small number of flat areas. Play with the sliders until you find the right balance of edge accuracy and simplicity.

BANISH THOUSANDS of useless colors with Photoshop's Cutout filter.



- 3** Once you've installed Harmony and chosen it as the default color picker in Photoshop's General Preferences, it pops up whenever you click on the foreground or background color chip in the Tools palette. Not to delve too deeply into color theory here, but Harmony gives you an easy way to derive sets of up to six analogous, complementary, or split-complementary colors—just by playing with a color wheel. Here, we've created a color scheme by selecting a fairly neutral purplish-gray color from the image using Harmony's eyedropper tool, locking that color in the swatch palette, selecting a six-color scheme, and then spinning the wheel to generate colors related to that gray.

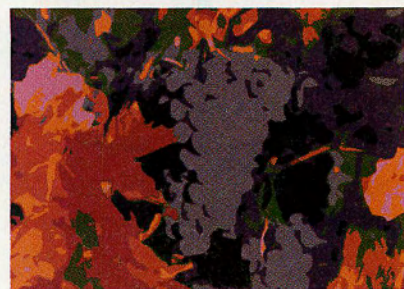
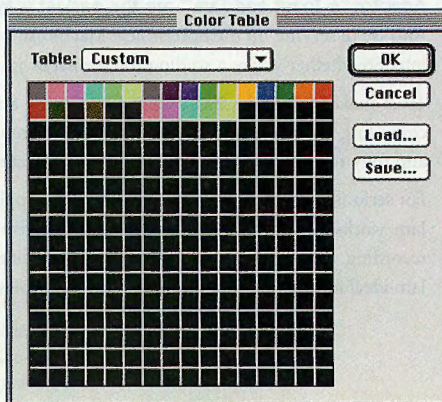
- 4** You can create up to 24 related color swatches by dragging colors from the main set of swatches to the scratch palette just below it. We've added some darker and lighter colors by setting the color wheel to change tint (percentage of white in the color), shade (percentage of black), and tone (color saturation). When you're done, export the set as a Photoshop color table by clicking the Options button. Make sure to click the button that includes the colors in the scratch palette.



USE HOT DOOR'S Harmony to generate a harmonious color scheme.

- 5** To apply the Harmony colors to the entire image at once, you've got to convert the image to indexed color mode by choosing Indexed Color under Mode in Photoshop's Image menu. Then choose Custom from the pop-up Palette menu. In the Color Table picker that appears, load the custom palette you saved from Harmony.

Click OK, and you've got yourself a new set of colors, baby.



ABSTRACT AND VIBRANT. Just the way grapes should be.

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ask us

Millennium mayhem, Sherlock shenanigans, and additional answers.

Questions?

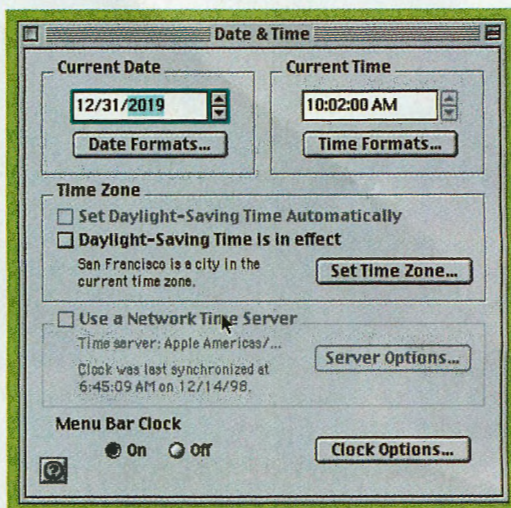
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FIND
DRAGANY-
WINDOW
4.5 and
Update-
Agent 3.0
on The Disc.

Q I keep hearing about how the millennium bug is going to affect all computers that are not compliant. I thought the Mac was Y2K compliant because I can switch the Date & Time control panel to 2000 with no problem. However, if I set the date to 1/1/20 and then create a folder, when I choose Get Info for that folder, the Mac reports that it was created on January 1, 1920! I've tried this on almost every Mac from a IIx to a Power Mac running OS 8, and I always get the same results. December 2019 works fine, but from what I've seen, we'll have a problem in 20 years. What I want to know is, does Apple know about this? Can it be fixed?

A As I reported in this column last year, the Mac has always correctly handled dates between January 1, 1904 and February 6, 2040. With the introduction of the Date & Time control panel, the Mac gained the ability to handle dates between 30,081 B.C. and 29,940 A.D., although the control panel currently won't allow you to enter dates outside



ALTHOUGH THE MAC IS Y2K COMPLIANT, you can't set the Date & Time control panel beyond the year 2019.

the range 1920 to 2019 (why, I don't know, and I can't get anyone at Apple to explain this). Practically speaking, that should be plenty good. Does anyone really anticipate using the same Mac hardware and software 20 years from now? Do you know anyone who is still using a 4K Apple II to accomplish anything meaningful? You may argue that's the kind of optimistic reasoning that got us into this Y2K mess in the first place, and you could be right, but there are more important things to worry about.

Speaking of handling the year 2000 properly, a lot of readers have written to ask whether this or that Mac application or version of the operating system will continue to

function when we next flip the calendar, from December 1999 to January 2000. The answer is yes if the programmers followed Apple's guidelines. To test this, simply bump the Date & Time control panel setting up a year and see if you notice any problems. From everything I've read about the Y2K problem, being able to launch Word or play Myth on your Mac is the least of your worries, especially when some "experts" are predicting worldwide recessions, global insurrections, and massive, prolonged power failures. As far as your Mac is concerned, the best advice I can give is to back up everything on your hard drive on a regular basis, not just on New Year's Eve.

Q I just bought an iMac and I love it, but I've been told there is more than one variation in this product line. How can I tell which model I have?

A Not long after the initial release of the iMac on August 15, 1998, Apple quietly revised the popular model to make it an even better deal. The original iMac is referred to as Rev. (short for revision) A, and the updated model is Rev. B. There is no way to tell the two revisions apart visually unless you still have the box in which the iMac arrived. If the carton bears the model number M6709LL/B, you've got a Rev. B iMac.

As for the differences between the models, they are significant. The original iMac came with 2MB of video memory (VRAM) expandable to 6MB, Mac OS 8.1 installed on the hard drive, and an ATI Rage IIC graphics accelerator chip. Rev. B models ship with a total of 6MB of VRAM, Mac OS 8.5, an ATI Rage Pro chip, and Adobe PageMill 3.0. So the simplest way to find out which iMac you have is to see if your iMac came with Mac OS 8.5 and PageMill. If so, you got a Rev. B.

Q In "30 Days to a Perfect Mac" (Dec/98, p32), the tip for day one of week one mentions a disclosure triangle next to the System

[continued on page 80]

PPPremier Counter

In a previous Ask Us (Dec/98, p98), an AT&T WorldNet Service subscriber wanted to know if there was a way to get the PPP control panel to display how much time remained from his allotment of 150 hours per month. I replied that unless your ISP's server is configured specifically to display the correct time remaining, the PPP control panel always indicates an unlimited amount of time left. This is still true, but since then a thoughtful reader (thanks, Silvia) brought to my attention a \$10 shareware program called PPPremier Timer (<http://www.biggerplanet.com>) that keeps a running total for the day, week, month, and year, plus it can count down the time remaining with notices. If your time online is limited, download a copy today to keep an eye on the meter as you surf the Net.



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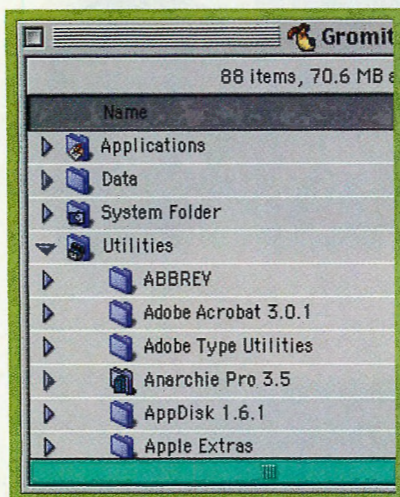


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DISCLOSURE TRIANGLES are the little triangular icons that appear to the left of the folder when you view volumes in list format.

Folder. I can't find this anywhere. Nor can I figure out how to get the Calculate Folder Sizes check box to appear in the View Options menu. Please excuse my low level of expertise, but I'm kind of new at this computer jazz. I have a Power Mac 6220CD with Mac OS 8.0, if that helps. I love the magazine and I want to follow the instructions in the article, so I'd appreciate any assistance in this area.

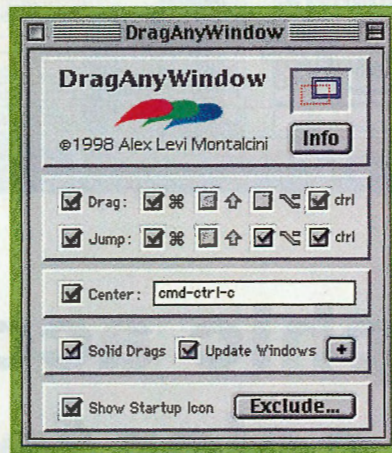
A Introduced a long time ago with System 7, the term *disclosure triangle* has never really caught on the way the names of other interface elements have, such as menu, icon, and window. To see the disclosure triangles, double-click your hard drive to open its window. Now choose As List from the View menu (the other view options don't use disclosure triangles). Immediately to the left of every folder icon, you should see a little triangle. If the triangle is pointing to the right, the folder is closed. If you click the triangle, it points down and reveals the contents of that folder—hence the name *disclosure triangle*.

Like disclosure triangles, the Calculate Folder Sizes check box appears only in List view. Set your view to List. Then you should be able to toggle the Calculate Folder Sizes option on and off from the View Options menu, depending on whether you want to sacrifice the time to see how much space each folder consumes on your hard drive.

Q Is there a list of what you need to upgrade before installing Mac OS 8.5? For example, I know that Symantec recently released Norton Utilities 4.0, and Connectix has tweaked Speed Doubler and RAM Doubler, but what about my other programs and utilities?

A Mac OS 8.5 isn't such a major change from Mac OS 8, but there are enough new features so that many older programs need updates to function properly. Fortunately, most of these updates are available free on the Internet, and VersionTracker lists many of them (<http://www.versiontracker.com>). Once you've spotted an update on VersionTracker, it's up to you to download the individual files manually. If that strikes you as tedious, perhaps you'd prefer using UpdateAgent (find it on The Disc, or go to <http://www.insidersoftware.com>). This nifty program scans all of the freeware, shareware, and commercial applications, extensions, and control panels on your hard drive and then compares them to a database listing the most current versions available. If it spots an outdated file, it gives you the option of downloading an update. You can tell UpdateAgent how often to scan for old files, and it can download updates in batches in the background. UpdateAgent costs \$12.95 for onetime use of the product, or \$49.95 for a full year of use.

Q Many times when I'm working with a program, a dialog box pops up onscreen, and I need to enter information that appears in the document right below the box. For example, I may want to fax a letter to someone, and when



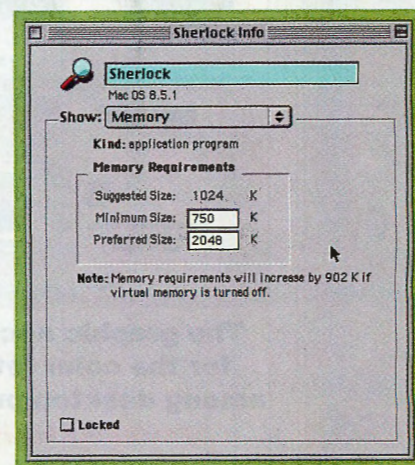
MOVE PESKY DIALOG BOXES out of your way using the handy control panel DragAnyWindow.

the fax software requests the phone number to dial, the dialog box obscures that information. So I have to close the dialog box, copy the phone number, then open the box again so I can paste the information into the correct field. Why can't I just move the stupid dialog box out of the way?

A As you've noticed, there are two types of windows and dialog boxes used on the Mac—movable ones and immovable ones. There are no immutable rules that dictate when to use

one type rather than another, but Apple has laid out guidelines on the subject that programmers routinely ignore. Alessandro Levi Montalcini has written a shareware program that does exactly what you want. As its name implies, DragAnyWindow, which you'll find on The Disc, allows you to move any kind of window easily, including "immovable" alert and dialog boxes.

Q I really love the metasearch capability of Sherlock in Mac OS 8.5. I've downloaded a bunch of Sherlock SRC plug-ins, but now I keep getting "not enough memory" error messages when I use Sherlock. How can I increase the amount of memory allocated to Sherlock?



INCREASE THE MEMORY ALLOCATED TO SHERLOCK just as you would for any other application—in the Get Info window.

A Sherlock is nothing more than an application, and as with all applications, you can increase the amount of memory allocated to it via the Get Info window. Use Sherlock's Find File feature to locate the Sherlock application on your hard drive. Select it in the Items Found window, then press Command-I to open its Get Info window. Switch back to the Sherlock application and quit (you can't change its memory allocation while the program is running). Back in the Get Info window, choose Memory from the Show pop-up menu. Tab down to the Preferred Size field and enter 2048 to double the amount of memory the program uses when launched. Close the Get Info window to save your new settings. Repeat these steps as needed until you no longer see "not enough memory" messages in Sherlock.

Owen W. Linzmayer is the author of *Apple Confidential: The Real Story of Apple Computer, Inc.*

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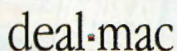
EveryMac tells you who makes what, with a specs-laden index of Macs and Mac-compatibles.



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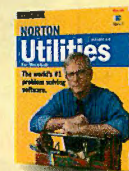
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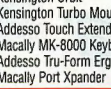
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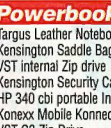
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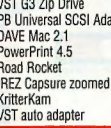
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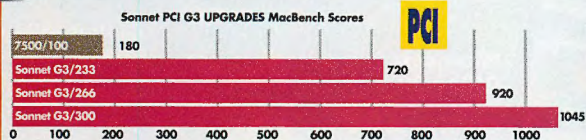


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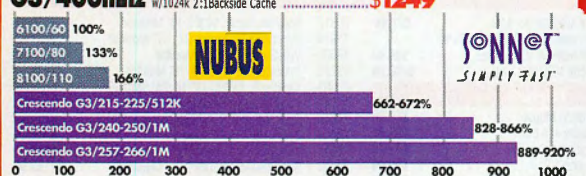
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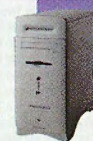
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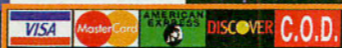
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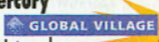
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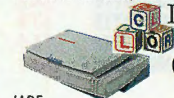


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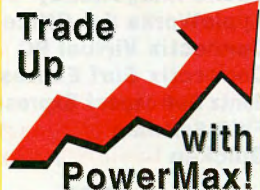
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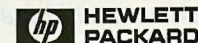
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7300/180 16/2GB/12X/KB	999.
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3228MB	5400rpm	512K	FB33200S	3yr	\$235	\$295
8455MB	5400rpm	512K	FB38400S	3yr	\$379	\$439
9100MB	7200rpm	1024K	XP309100S	3yr	\$439	\$499
18200MB	7200rpm	1024K	XP318200S	3yr	\$775	\$835

ULTRA WIDE SCSI

4550MB	7200rpm	512K	VK304550W	5yr	\$250	\$340
9100MB	7200rpm	512K	VK309100W	5yr	\$395	\$485

ULTRA 2 SCSI

4550MB	7200rpm	512K	VK304550LW	5yr	\$250	\$350
9100MB	7200rpm	512K	VK309100LW	5yr	\$395	\$495
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6530MB	7200rpm	512K	ST36530N	3yr	\$315	\$375
9140MB	7200rpm	512K	ST39140N	3yr	\$409	\$469
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18200MB	7200rpm	1024K	ST118273N	5yr	\$775	\$835

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6530MB	7200rpm	512K	ST36530W	3yr	\$315	\$405
9140MB	7200rpm	512K	ST39140W	3yr	\$409	\$499
9190MB	7200rpm	1024K	ST39173W	5yr	\$425	\$515
18200MB	7200rpm	1024K	ST118273W	5yr	\$775	\$865

ULTRA 2 SCSI

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9100MB	10,000rpm	1024K	ST39102LW	5yr	\$699	\$809
9100MB	10,000rpm	4096K	ST39102LW4	5yr	\$779	\$889
9190MB	10,000rpm	1024K	ST39173LW	5yr	\$425	\$535
18200MB	7200rpm	1024K	ST118273LW	5yr	\$775	\$885
18200MB	10,000rpm	1024K	ST118202LW	5yr	\$1289	\$1399
18200MB	10,000rpm	4096K	ST118202LW4	5yr	\$1399	\$1509

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9100MB	7200rpm	512K	IBM39130N	5yr	\$459	\$519
18200MB	7200rpm	1024K	IDGHS18Z	5yr	\$819	\$879

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18200MB	7200rpm	1024K	IDGHS18U	5yr	\$819	\$909

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18200MB	10020rpm	4096K	IDRVS18U2	5yr	\$1099	\$1209
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36GB	7,200rpm	2 18GB Quantum Atlas drives	\$2599
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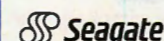
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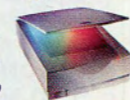
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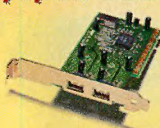


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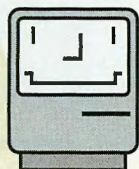
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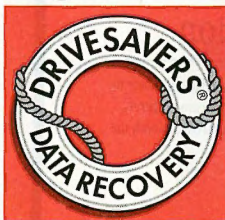
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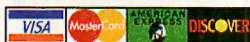
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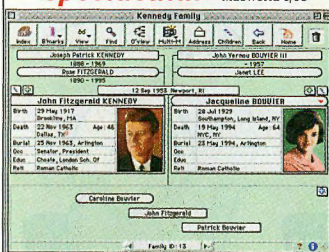
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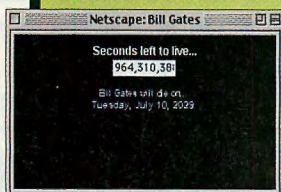
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Dead on the Money

In the midst of the Microsoft antitrust trial, Bill Gates donated \$100 million to vaccination programs for kids in developing countries. While many felt the CEO was just trying to polish his

tarnished image, we think he simply realized his time is running out. According to the Death Clock (<http://www.deathclock.com>), Gates has fewer seconds to live than he has dollars to spend.



Apple Employee Evaluation

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- Apple and Microsoft combined have:
 - 100 percent share of the high-volume OS market
 - 100 percent share of arrogance and egotism
 - All of the above
- When firing Apple employees, it's best to think of them as:
 - Small children
 - Collectible Beanie Babies
 - Naked
 - Naked Beanie Baby collectors
- To get into the Internet party, you must:
 - Buy an iMac.
 - Know somebody who's hosting it
 - Agree to be the designated modem driver
 - What party?
- The iMac...
 - Combines the excitement of the Internet with the simplicity of the Macintosh
 - Has something to do with email
 - Is missing a floppy drive! What a dumb idea! How am I supposed to back up? How will I transfer files? Who's the idiot who forgot to include the floppy drive?
- Mac OS 8.5 is:
 - A must-have upgrade
 - Like getting a new Mac for only \$99
 - None of the above

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ERROR 2000

As we head into the new millennium, you'll be glad you don't do Windows! According to news reports circulating the Web (humor sites), the following dire messages are under consideration for inclusion in the ever-delayed release of Windows 2000:

- Smash forehead on keyboard to continue.
- Press any key to continue or any other key to quit.
- Press any key except...no, NO, NO, NOT THAT ONE!!!!
- Close your eyes and press Escape three times.
- This will end your Windows session. Do you want to play another game?
- To "shut down" your system, type WIN.
- Error reading FAT record: Try the SKINNY one? (Y/N)
- User error: Replace user.
- Windows VirusScan 1.0—"Windows found: Remove it? (Y/N)"
- Bad command or file name! Go stand in the corner!

APPLE SECRETS REVEALED

The following Apple top secrets were leaked on the QT from TK (aka Tathy Kafel), our spy on the inside. Although we aren't able to reveal her true identity due to Apple's strict "don't bother asking because we're not going to tell you anything anyway" policy, these juicy nuggets were too good to keep to ourselves:

- The next Macworld Expo will be held in the city of Boston sometime during the summer months.
- Apple Computer is located at 1 Infinite Loop, Cupertino, California.
- Mac OS 8.5 is a must-have upgrade.
- Apple engineers are even now working on a new version of the Mac OS to be called...Mac OS X.
- Apple interim CEO Steve Jobs is also living a secret double life as the president of the animation company responsible for the hit movie *A Bug's Life*.

GOLDILOCKS AND THE THREE MICE



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Classic Comedy

Thanks go to reader Les E. Murayama for brightening our lives with this golden oldie:

Q: How many Windows users does it take to change a light bulb?

A: One. But they'll swear up and down that it was *just* as easy as it would be for a Mac user.

uSCSI™

Don't pack away those SCSI peripherals just yet. With a uSCSI cable you can plug your trusty old SCSI devices into USB ports, and daisy chain up to seven SCSI devices from one USB port. Just plug your peripherals in and turn them on. No rebooting is necessary.



uFlash-CF™ and uFlash-SM™

One of the advantages of a digital camera is saving time. But as image quality increases, so does file size. Enter uFlash-CF and uFlash-SM. Acting as removable disk drives for CompactFlash media and SmartMedia peripherals, these readers will transfer data up to 80 times faster than serial cables. Now you can take pictures, remove the disk from your camera, insert it into uFlash, and go right back to shooting. Suddenly your digital camera really is saving you time.

uDrive™ and uHub™ (Stacked together)

It comes in Ice Blue, it's inexpensive, and it completes your iMac. Unfortunately it doesn't come with your iMac. NewerTechnology's uDrive gives you the flexibility to transport files and install software with ease. Simply plug it into a USB port on your iMac and pop in a floppy. And, best of all, it stacks nicely with all your other USB peripherals from NewerTechnology.

USB allows you to attach up to 128 devices simultaneously, and NewerTechnology's uHub helps you keep it all organized. This seven port powered hub makes it incredibly easy to connect keyboards, mice, printers, monitors, cameras, speakers, storage devices, and other USB peripherals. Plus, you have the flexibility to plug and unplug peripherals without restarting your computer.



Introducing Five More Ways to Get Attached to Your iMac™.



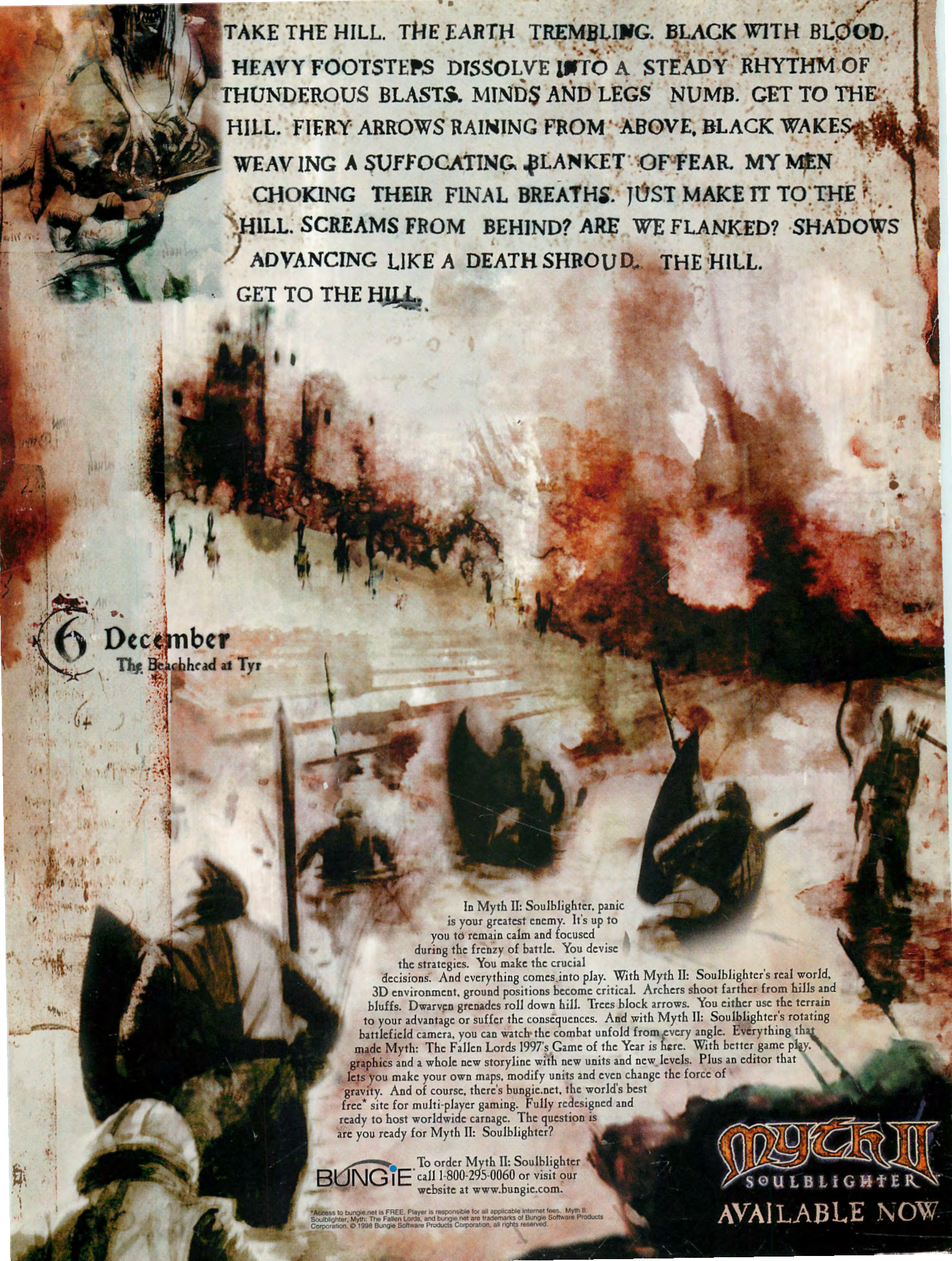
USB is a fast and flexible new way of connecting peripherals to your computer, and soon it will be the standard for all Macs. With a data transfer rate of up to 12 megabits per second, it runs circles around ADB and LocalTalk®. So, take advantage of all the benefits from your iMac and order Newer Technology's USB peripherals.



To learn how to get the most from your iMac, visit us at www.newertech.com

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Sometimes Newer Is Better Than New.



TAKE THE HILL. THE EARTH TREMBLING. BLACK WITH BLOOD.
HEAVY FOOTSTEPS DISSOLVE INTO A STEADY RHYTHM OF
THUNDEROUS BLASTS. MINDS AND LEGS NUMB. GET TO THE
HILL. FIERY ARROWS RAINING FROM ABOVE, BLACK WAKES
WEAVING A SUFFOCATING BLANKET OF FEAR. MY MEN
CHOKING THEIR FINAL BREATHS. JUST MAKE IT TO THE
HILL. SCREAMS FROM BEHIND? ARE WE FLANKED? SHADOWS
ADVANCING LIKE A DEATH SHROUD. THE HILL.
GET TO THE HILL.

6 December
The Beachhead at Tyr

In Myth II: Soulblighter, panic is your greatest enemy. It's up to you to remain calm and focused during the frenzy of battle. You devise the strategies. You make the crucial decisions. And everything comes into play. With Myth II: Soulblighter's real world, 3D environment, ground positions become critical. Archers shoot farther from hills and bluffs. Dwarfen grenades roll down hill. Trees block arrows. You either use the terrain to your advantage or suffer the consequences. And with Myth II: Soulblighter's rotating battlefield camera, you can watch the combat unfold from every angle. Everything that made Myth: The Fallen Lords 1997's Game of the Year is here. With better game play, graphics and a whole new storyline with new units and new levels. Plus an editor that lets you make your own maps, modify units and even change the force of gravity. And of course, there's bungie.net, the world's best free* site for multi-player gaming. Fully redesigned and ready to host worldwide carnage. The question is are you ready for Myth II: Soulblighter?

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call 1-800-295-0060 or visit our
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